

FIG. 1

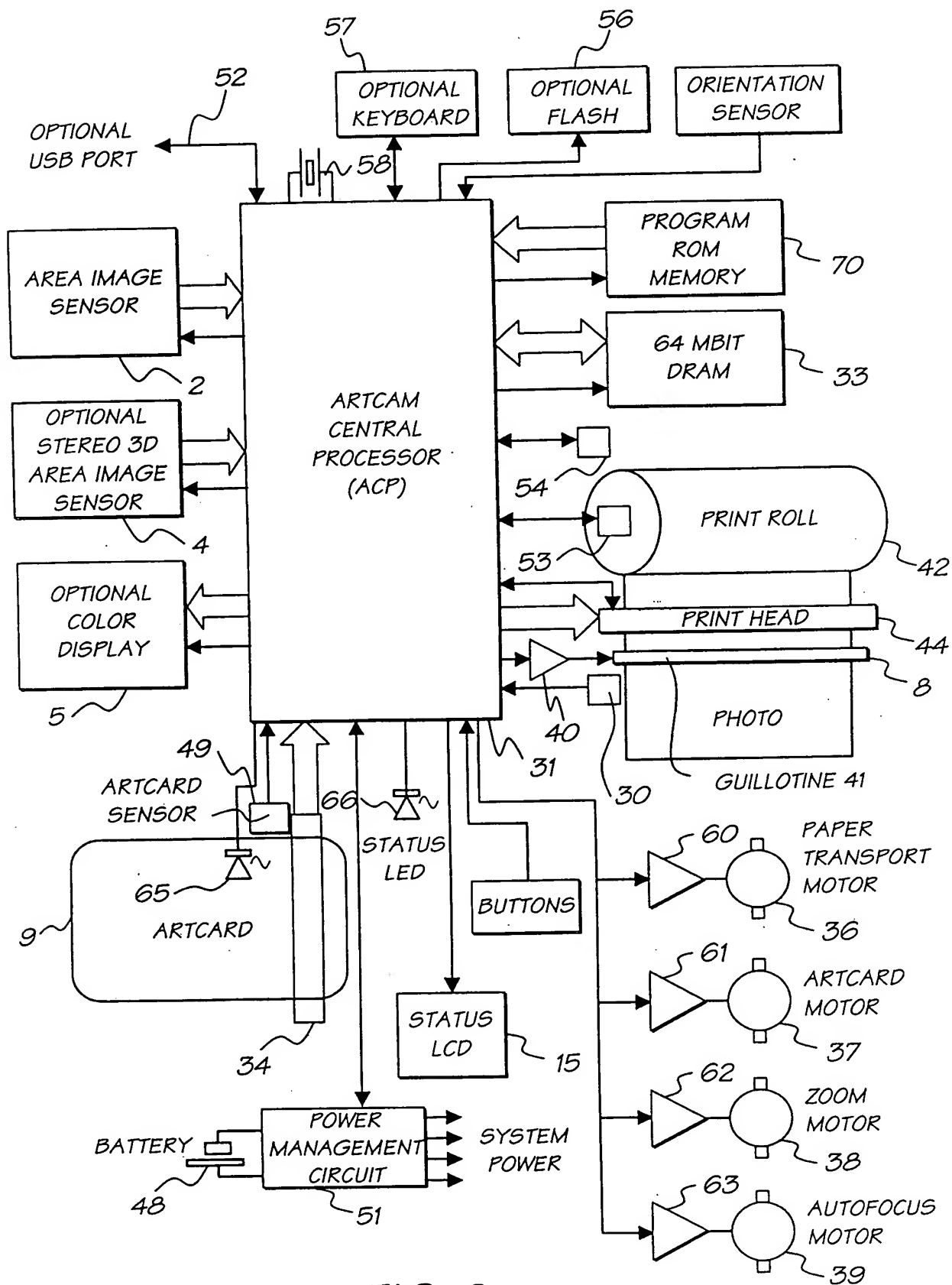


FIG. 2

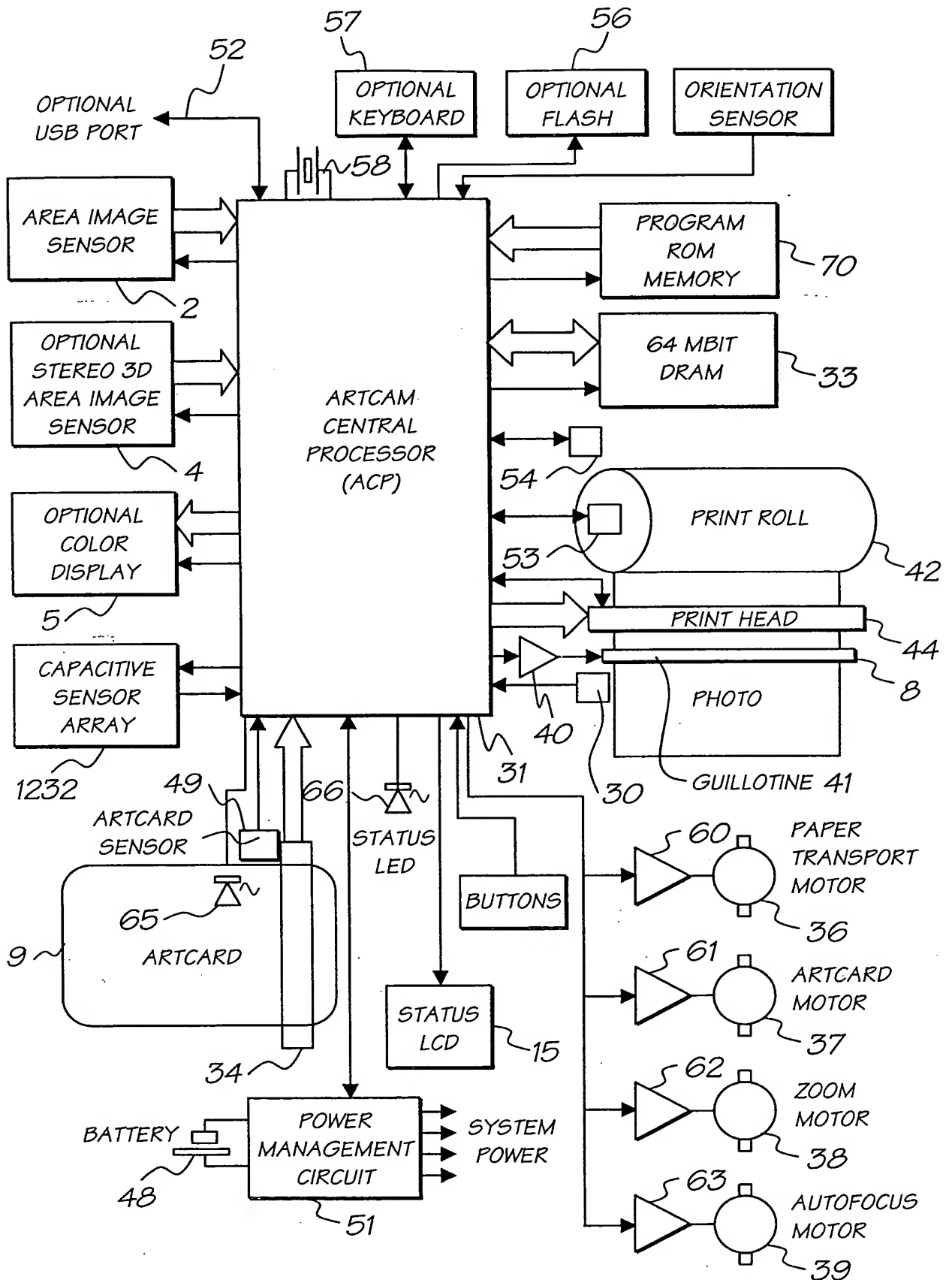


FIG. 2A

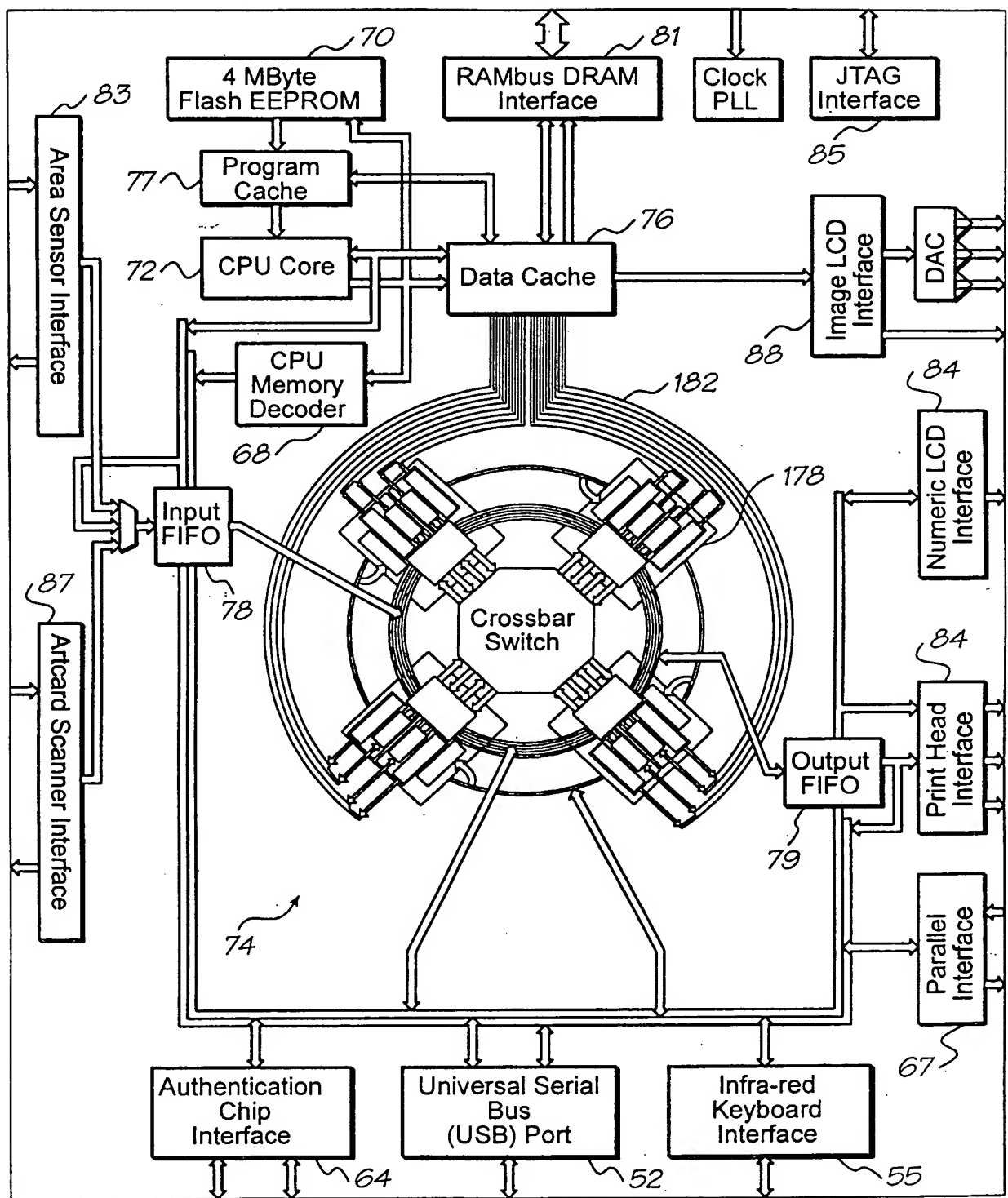


FIG. 3

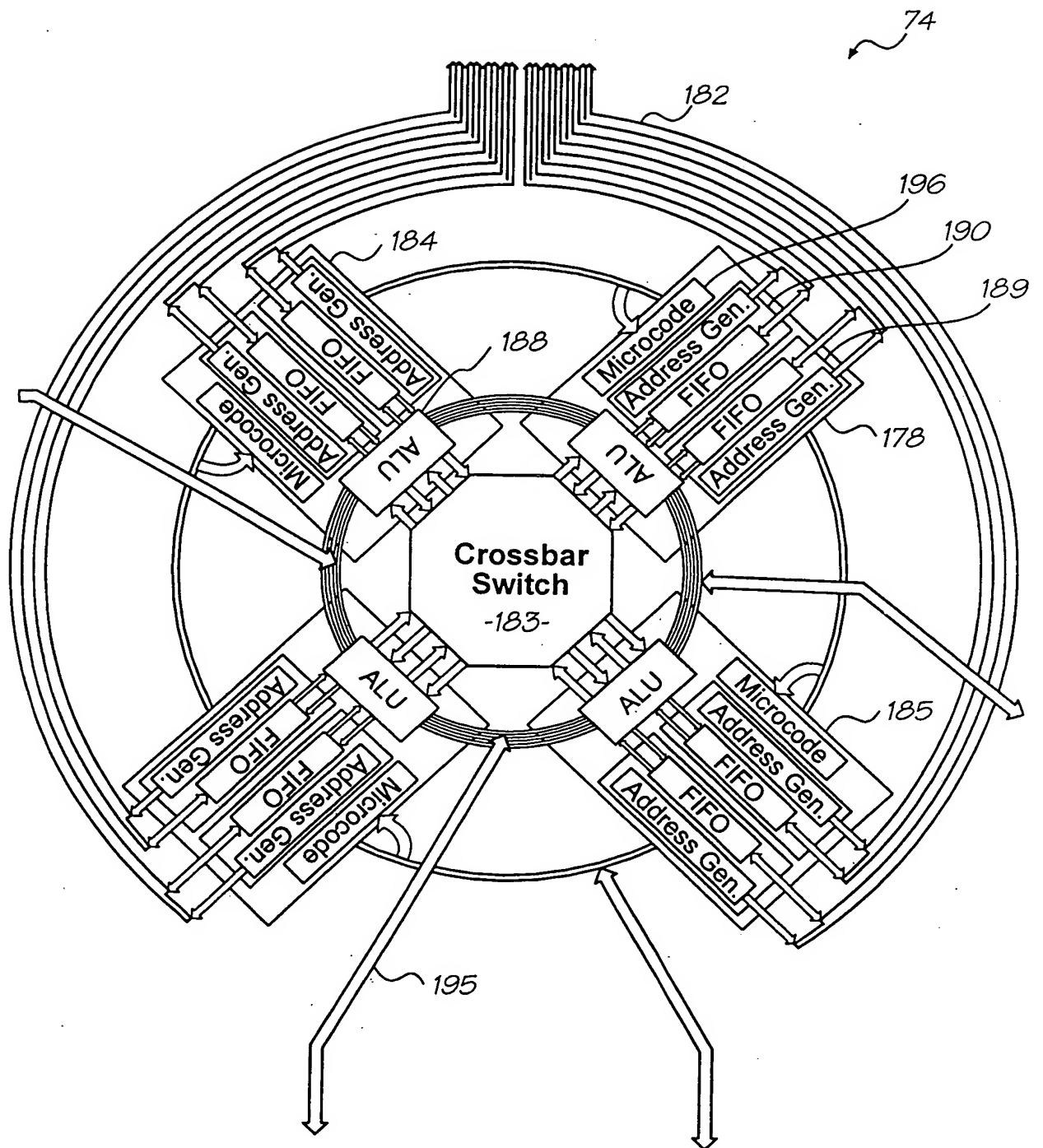


FIG. 3(a)

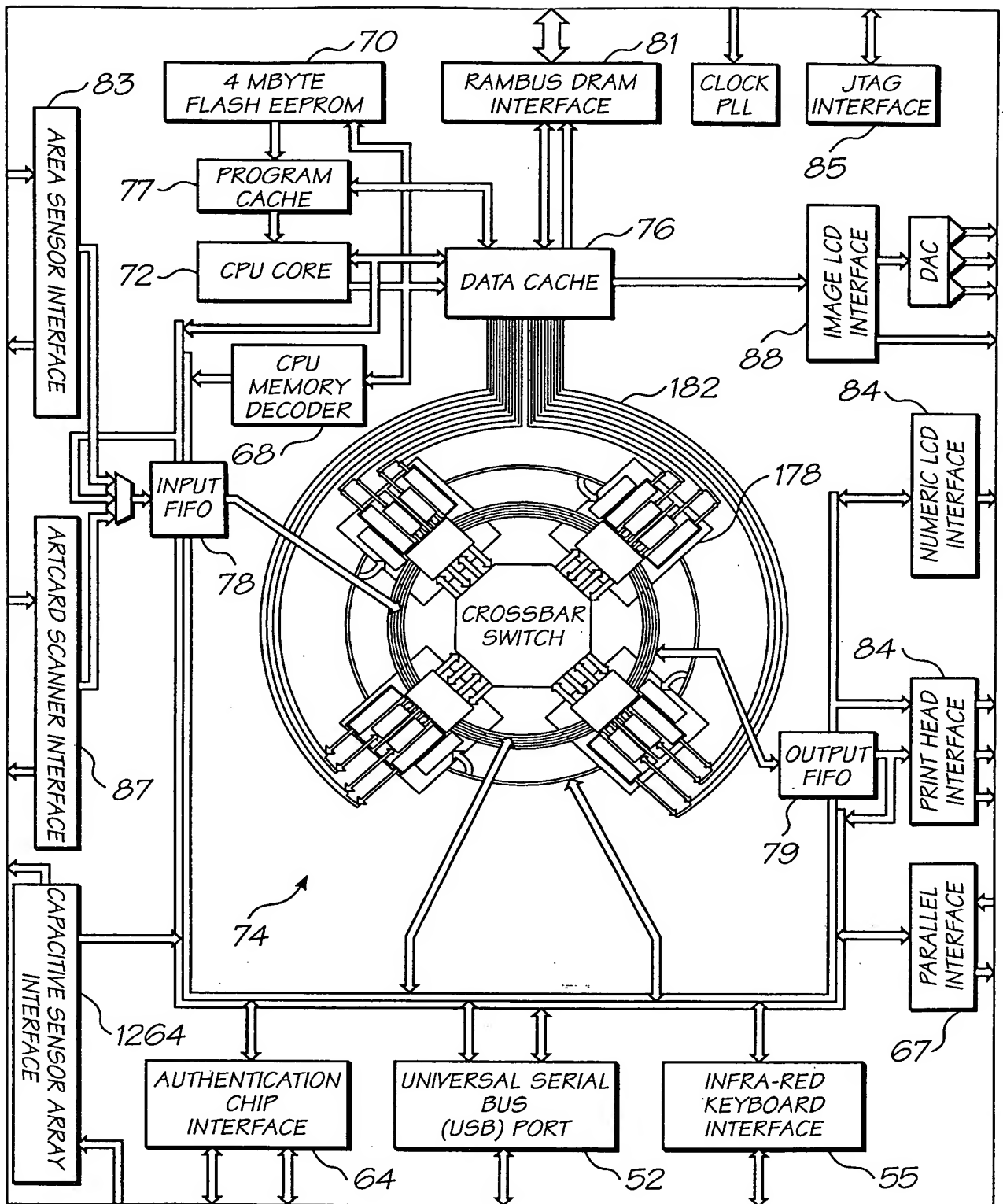


FIG. 3A

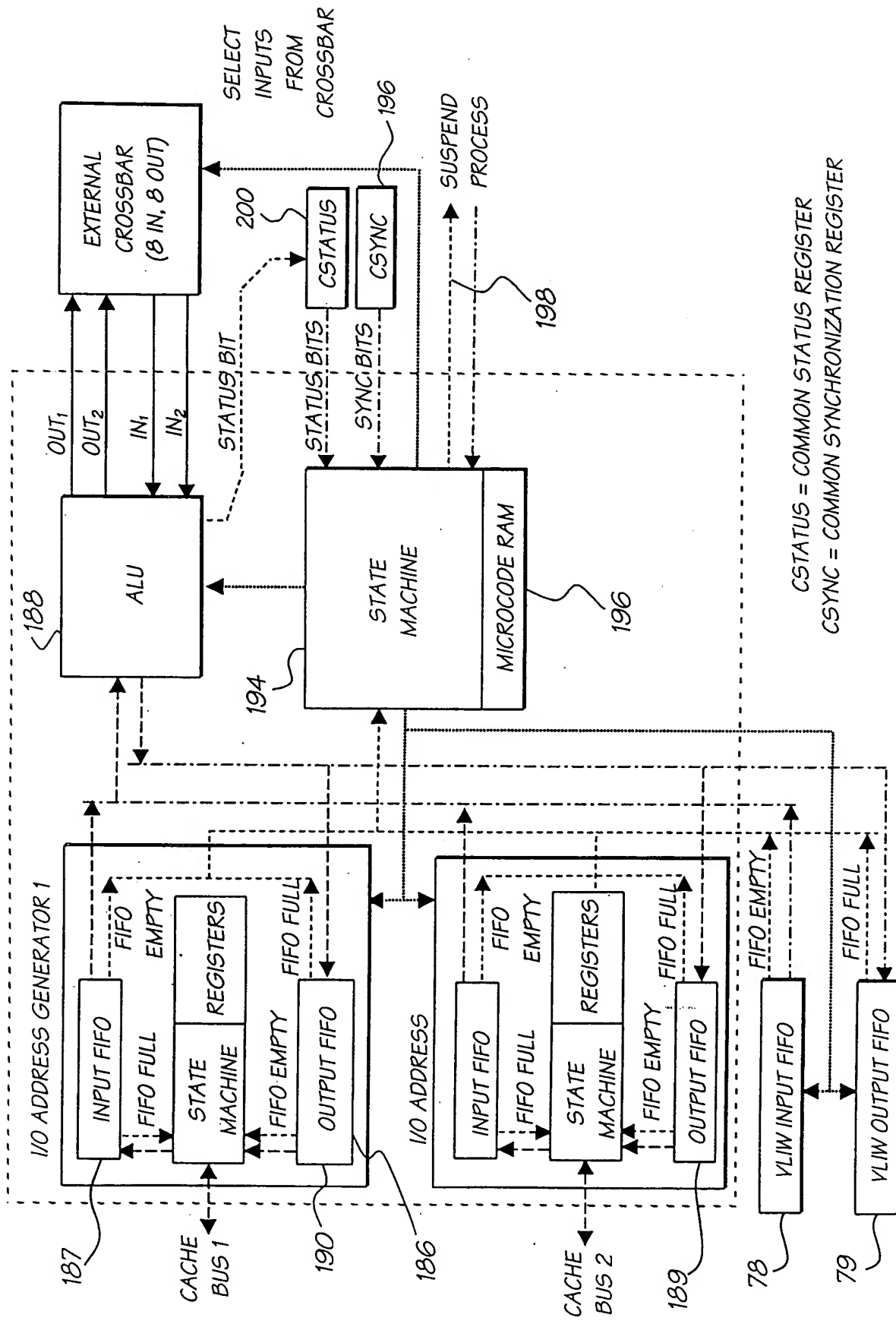


FIG. 4

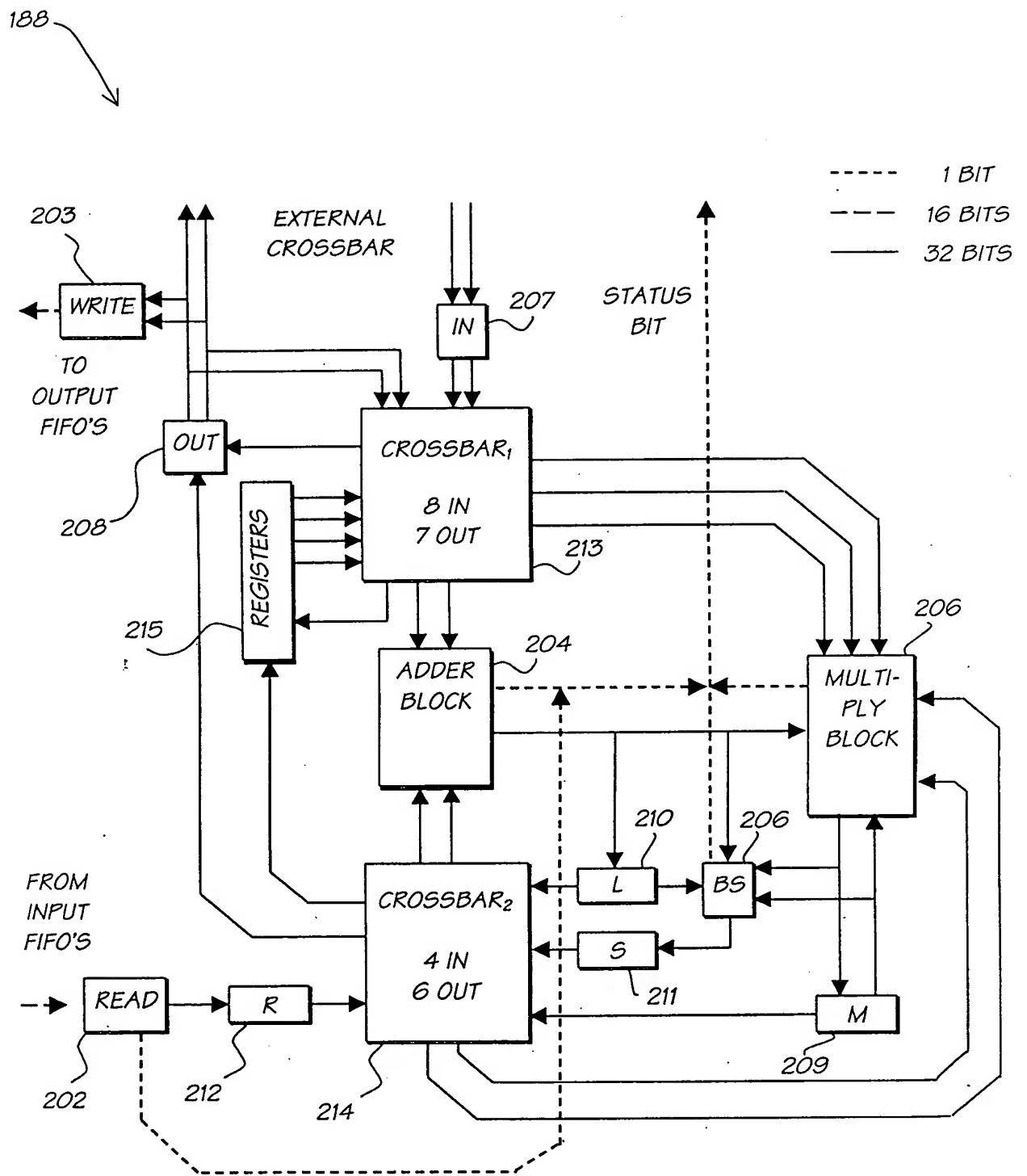


FIG. 5

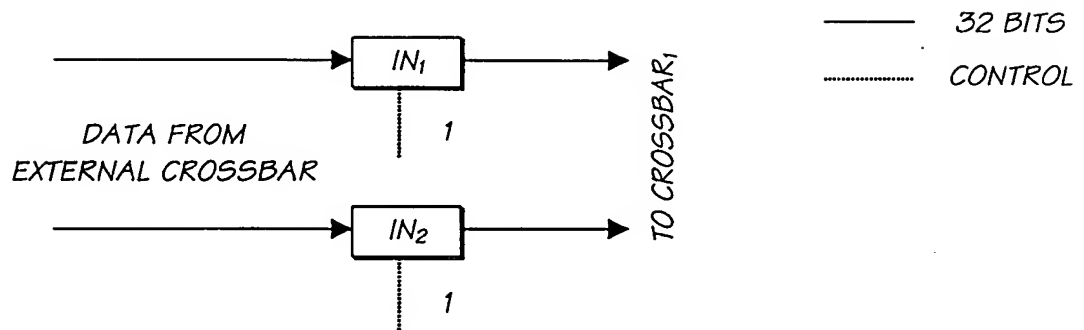


FIG. 6

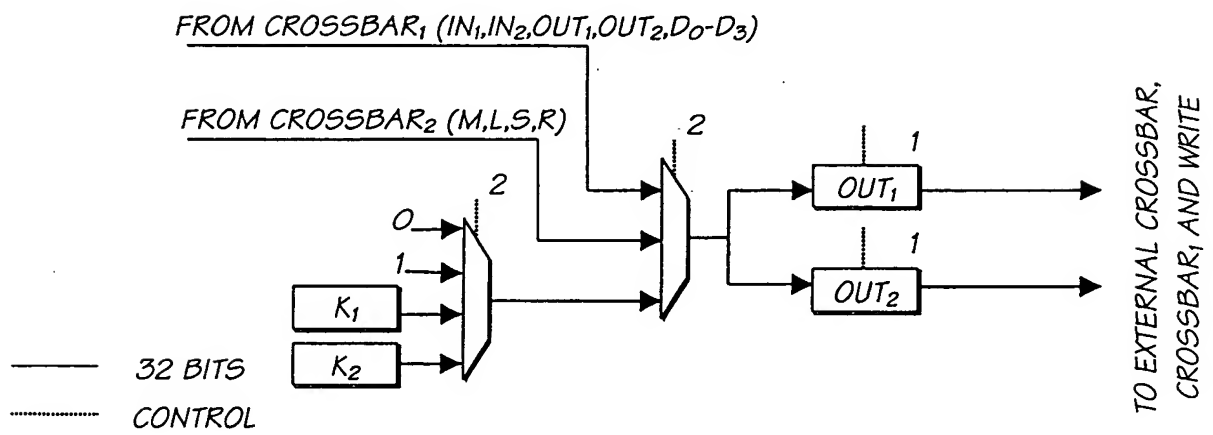


FIG. 7

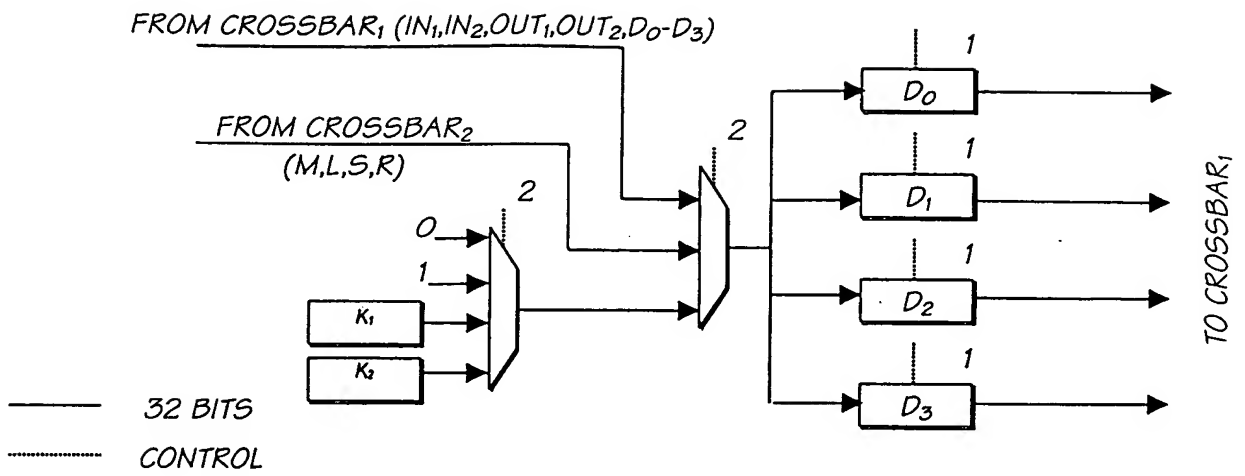


FIG. 8

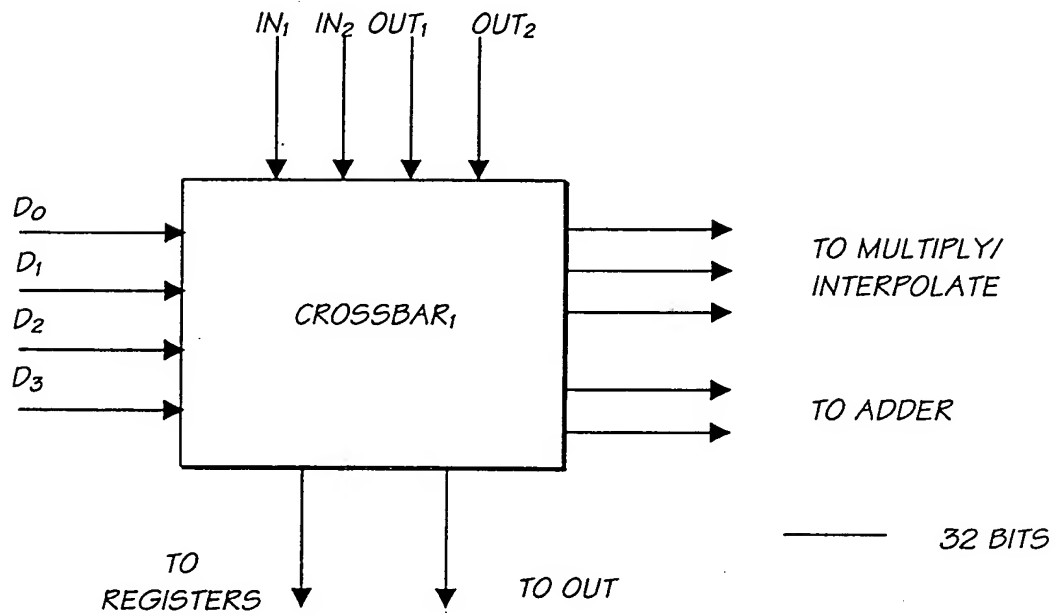


FIG. 9

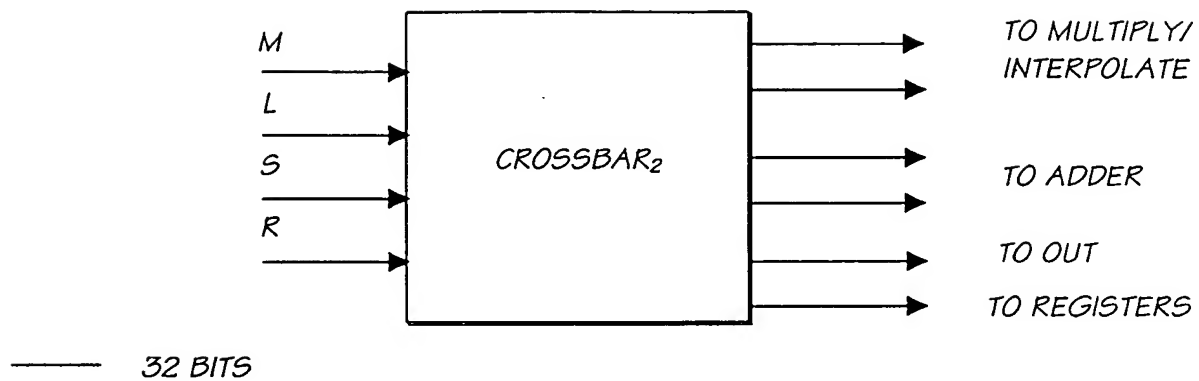


FIG. 10

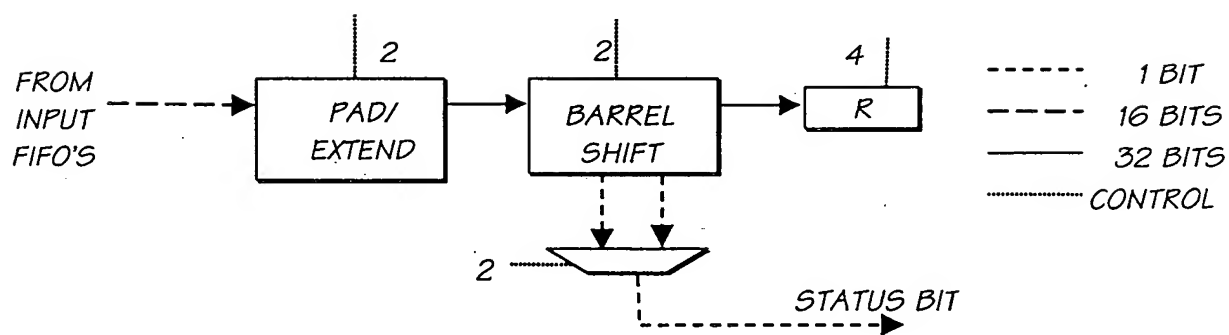


FIG. 11

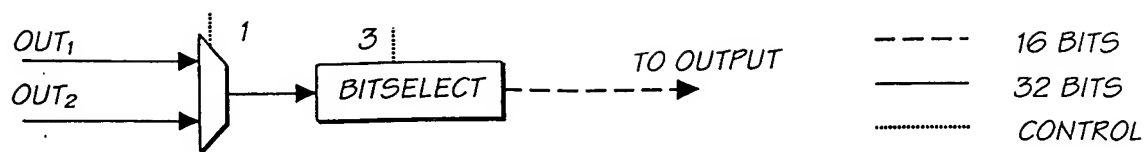


FIG. 12

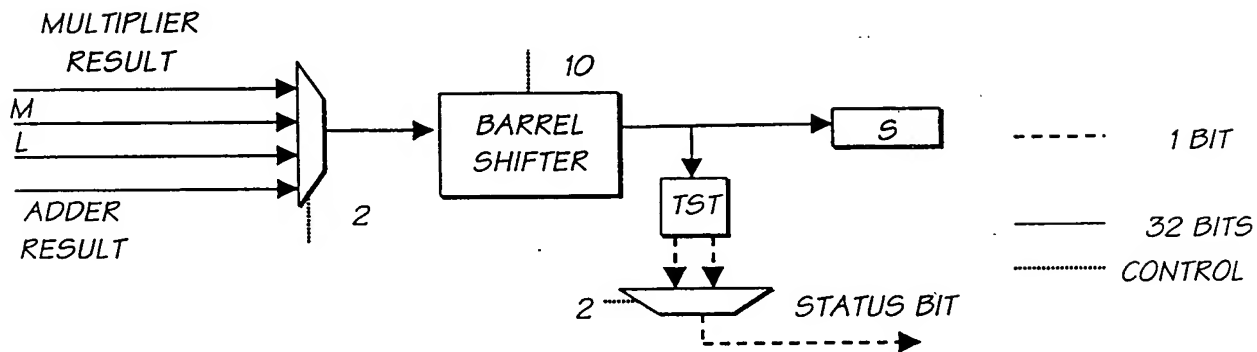


FIG. 13

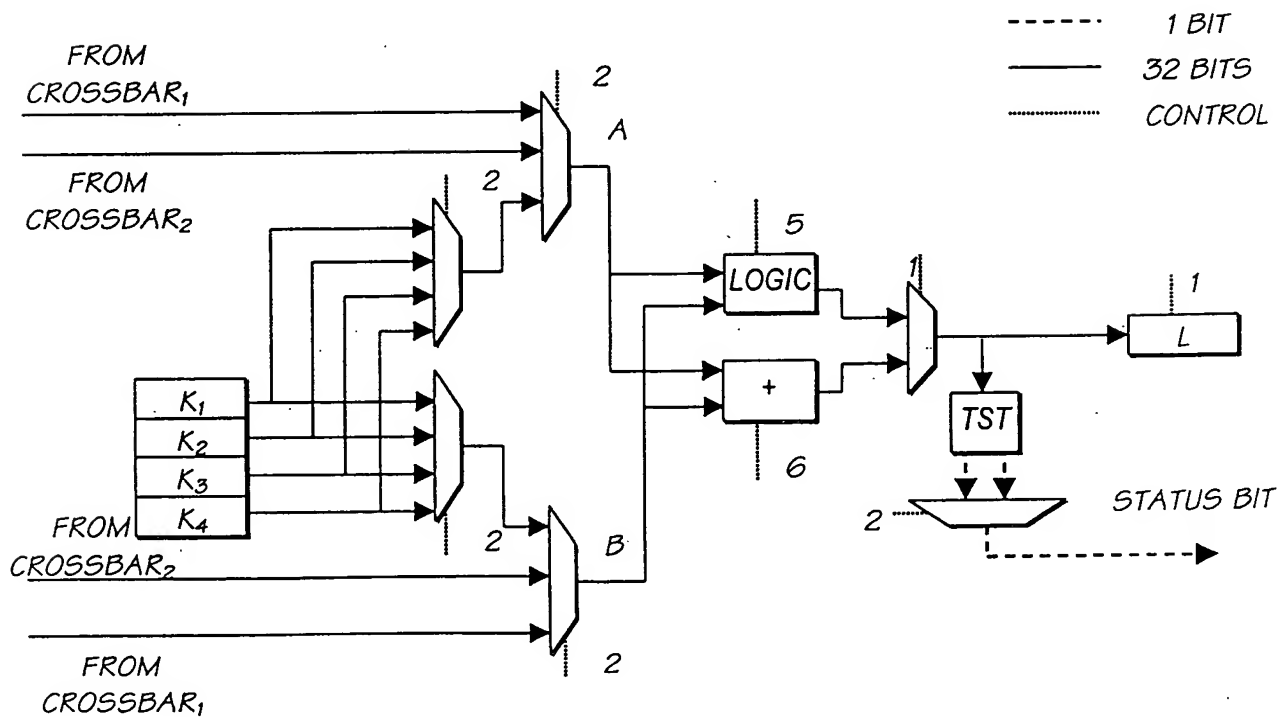


FIG. 14

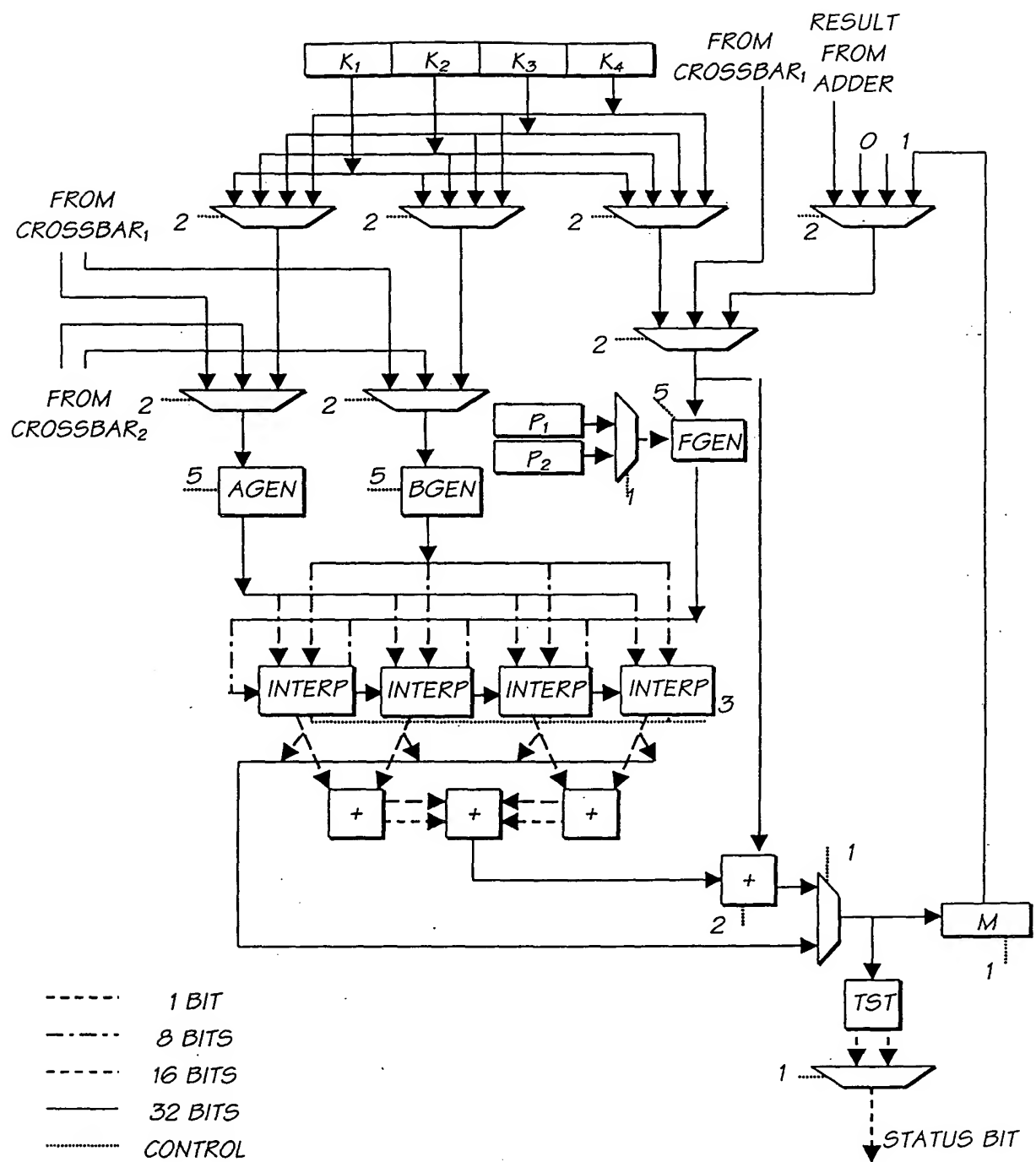


FIG. 15

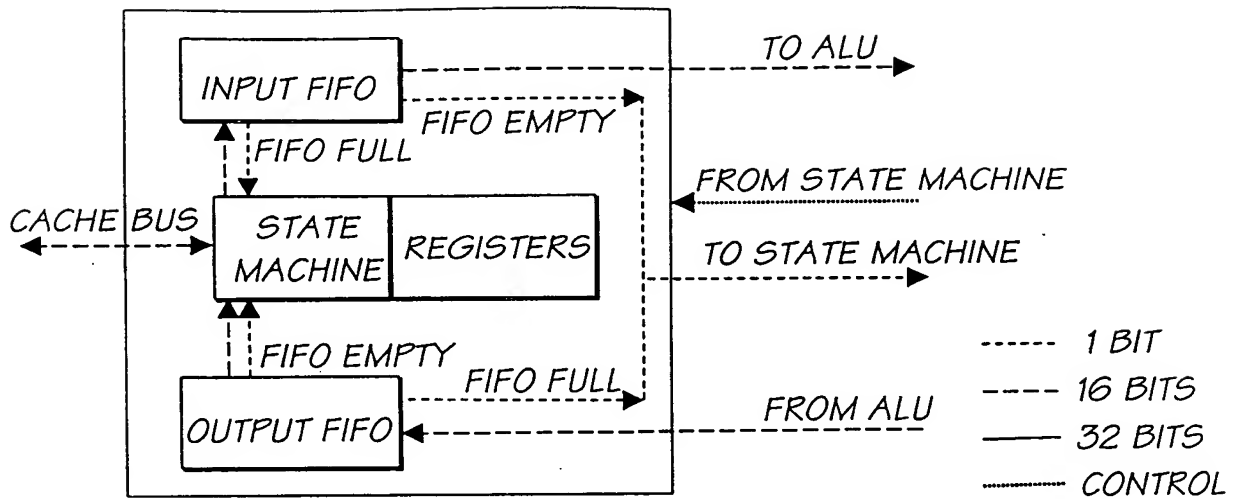


FIG. 16

ORDER OF PIXELS PRESENTED BY A SEQUENTIAL READ ITERATOR  
ON A 4 X 2 IMAGE WITH PADDING.

0	1	2	3	
4	5	6	7	

FIG. 17

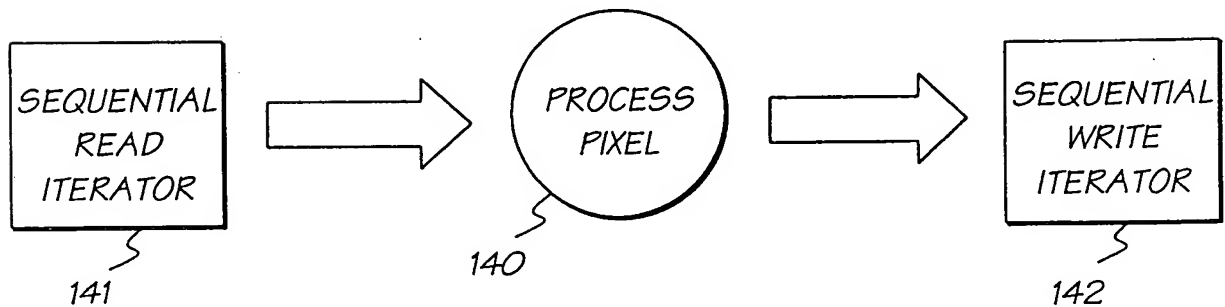
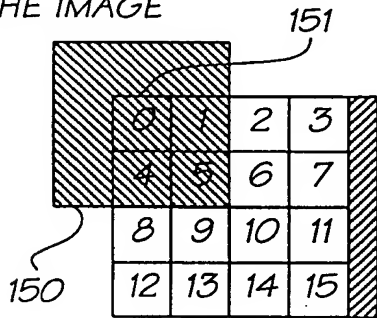


FIG. 18

A 3x3 BOX VIEW TRAVERSES THE PIXELS IN ORDER: 0, 1, 2, 3, 4, 5, 6, 7, 8  
ETC, PLACING A 3x3 BOX CENTERED OVER EACH PIXEL...

3x3 BOX VIEW OF FIRST  
PIXEL IN IMAGE = 9 PIXELS,  
5 OF WHICH ARE OUTSIDE  
THE IMAGE

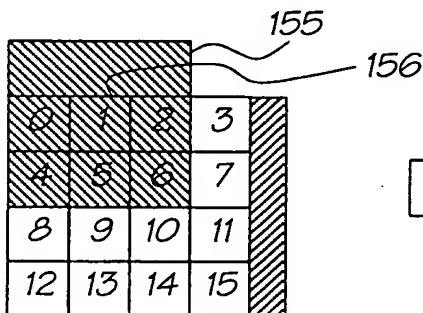


FIRST 9 PIXELS FROM THE BOX  
READ ITERATOR:

IF DUPLICATION OF EDGE PIXELS IS  
ON: 0, 0, 0, 0, 0, 1, 4, 4, 5

IF DUPLICATION OF EDGE PIXELS IS  
OFF: V, V, V, V, 0, 1, V, 4, 5  
WHERE V IS CONSTANT PIXEL  
REGISTER VALUE REPRESENTING  
"OUTSIDE THE IMAGE"

3x3 BOX VIEW OF  
SECOND PIXEL IN IMAGE  
= 9 PIXELS,  
3 OF WHICH ARE  
OUTSIDE THE IMAGE



SECOND 9 PIXELS FROM THE BOX  
READ ITERATOR:

IF DUPLICATION OF EDGE PIXELS  
IS ON: 0, 1, 2, 0, 1, 2, 4, 5, 6

IF DUPLICATION OF EDGE PIXELS  
IS OFF: V, V, V, 0, 1, 2, 4, 5, 6  
WHERE V IS CONSTANT PIXEL  
REGISTER VALUE REPRESENTING  
"OUTSIDE THE IMAGE"

FIG. 19

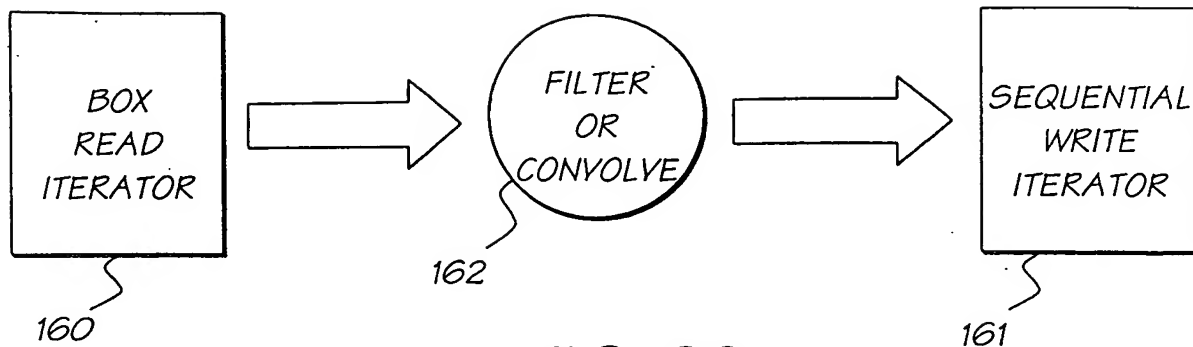
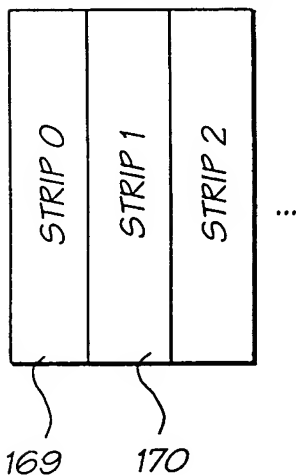
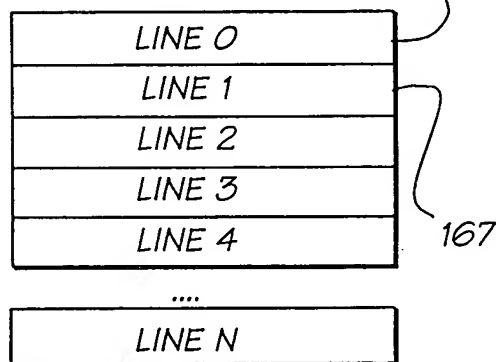


FIG. 20

IMAGE BROKEN INTO  
VERTICAL STRIPS,  
EACH STRIP IS 32  
PIXELS ACROSS



LINES ARE ACCESSED  
LINE 0 TO LINE N  
WITHIN A SINGLE STRIP.



PIXELS ARE ACCESSED  
PIXEL 0 - PIXEL 31  
WITHIN A SINGLE LINE

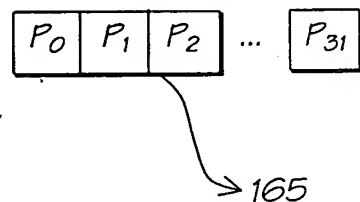


FIG. 21

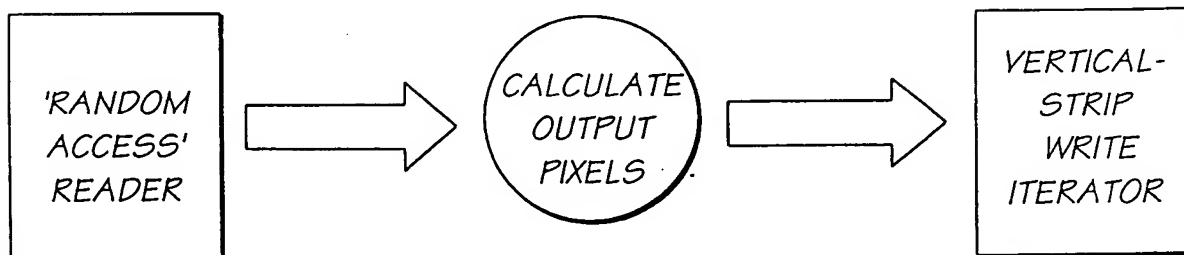


FIG. 22

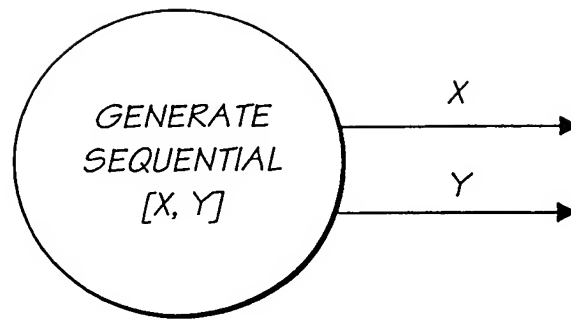


FIG. 23

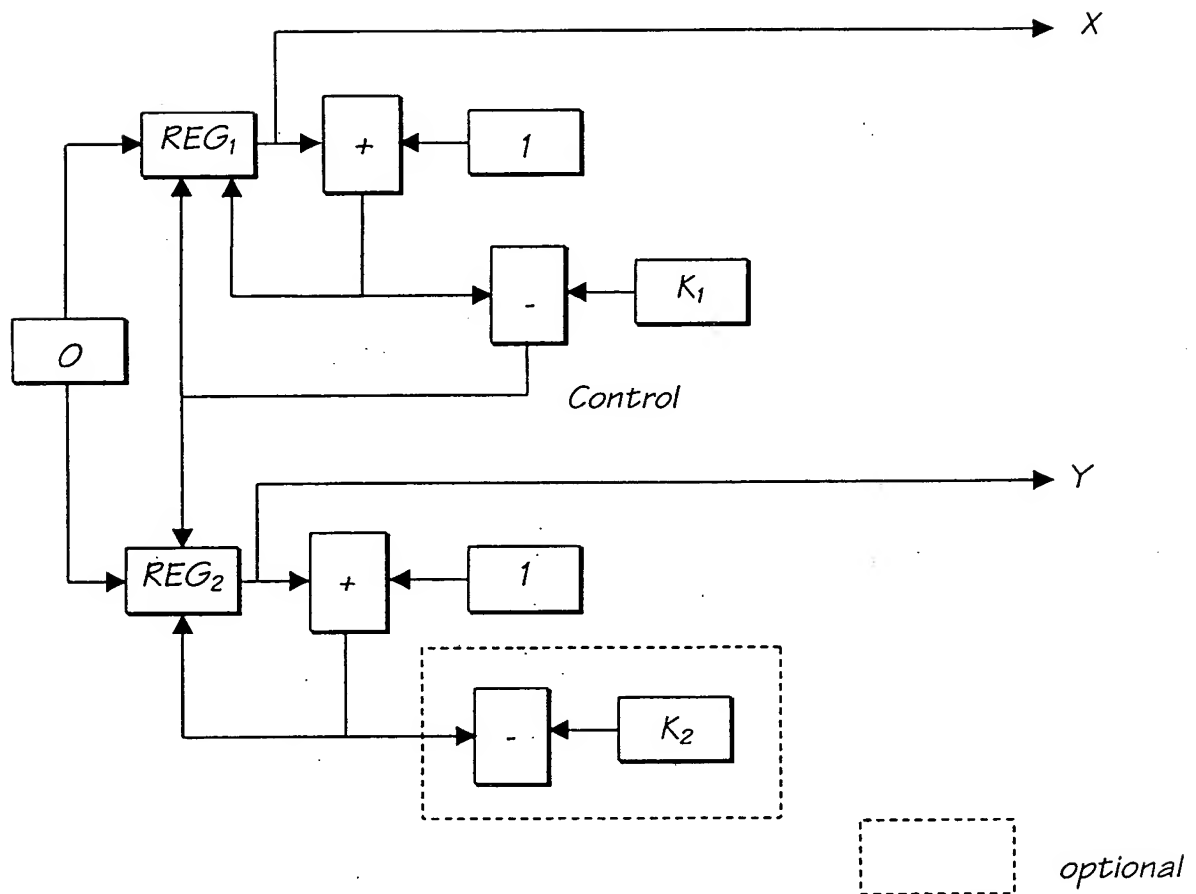


FIG. 24

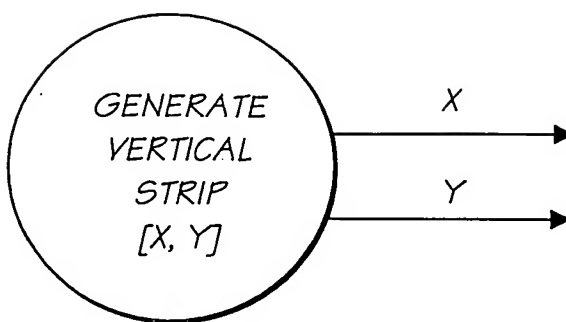


FIG. 25

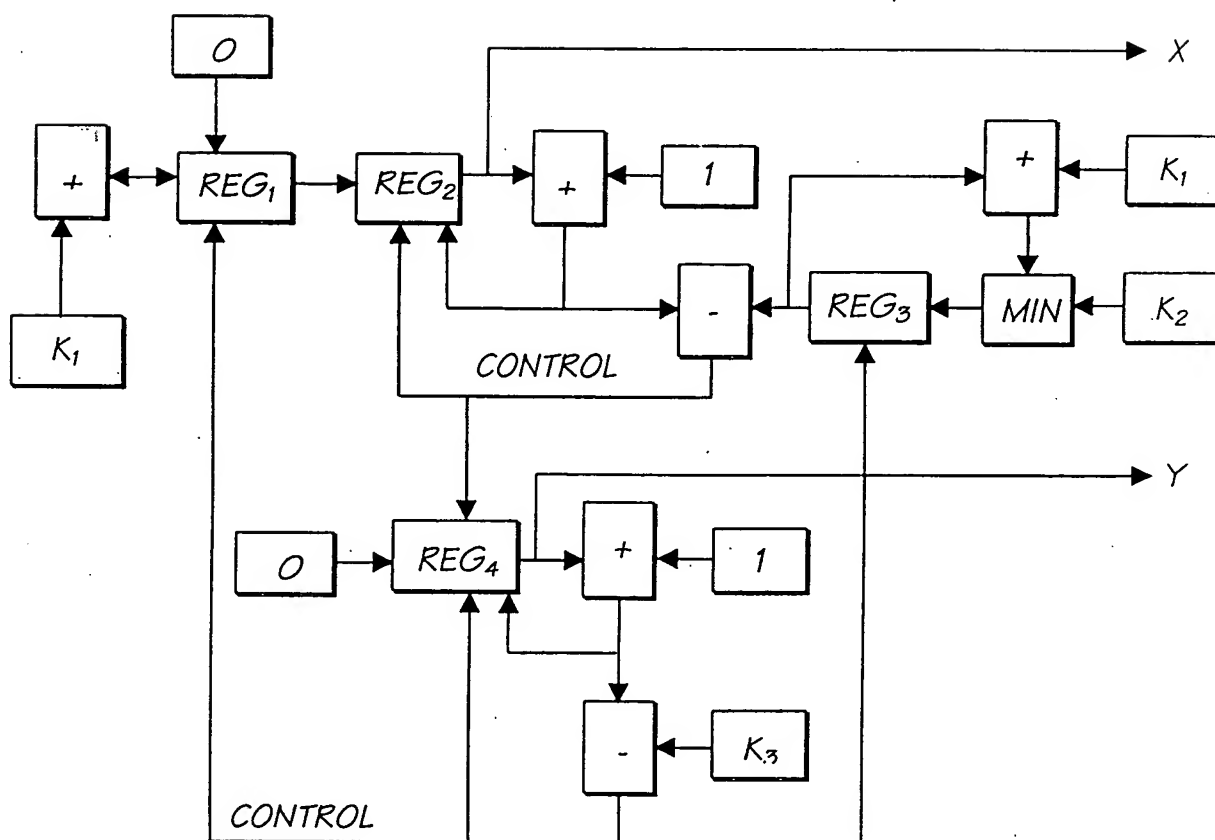
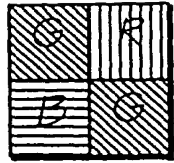


FIG. 26



2X2 PIXEL BLOCK FROM SENSOR

FIG. 27

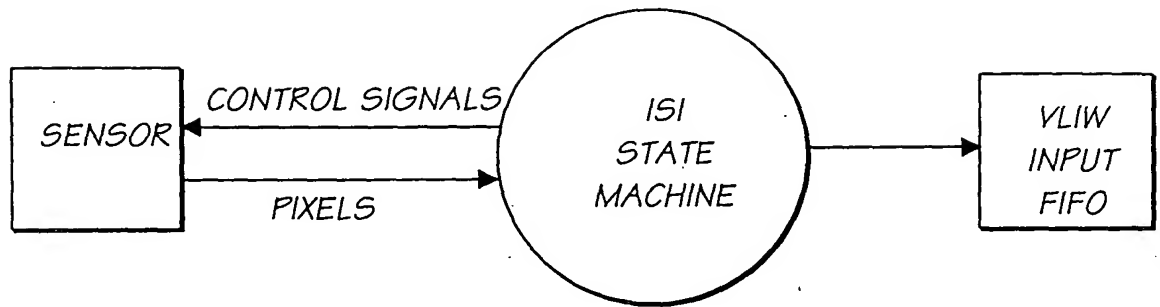


FIG. 28

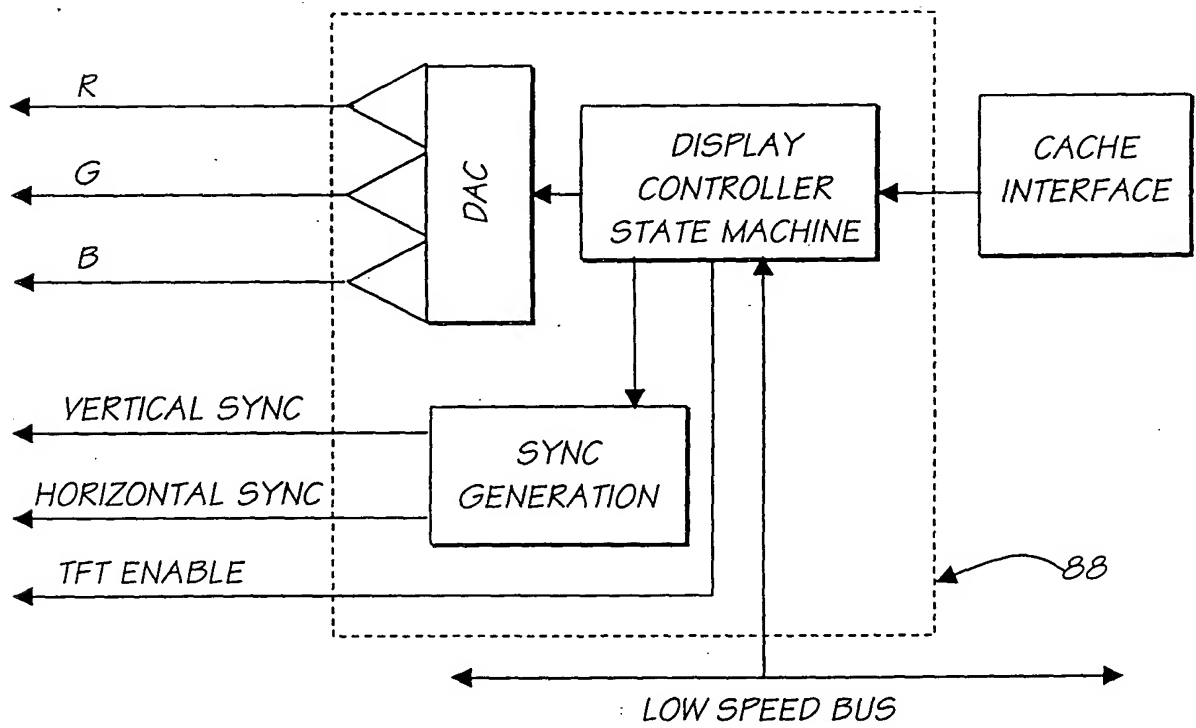
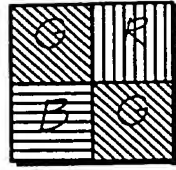


FIG. 29



2X2 PIXEL BLOCK FROM CCD

FIG. 30

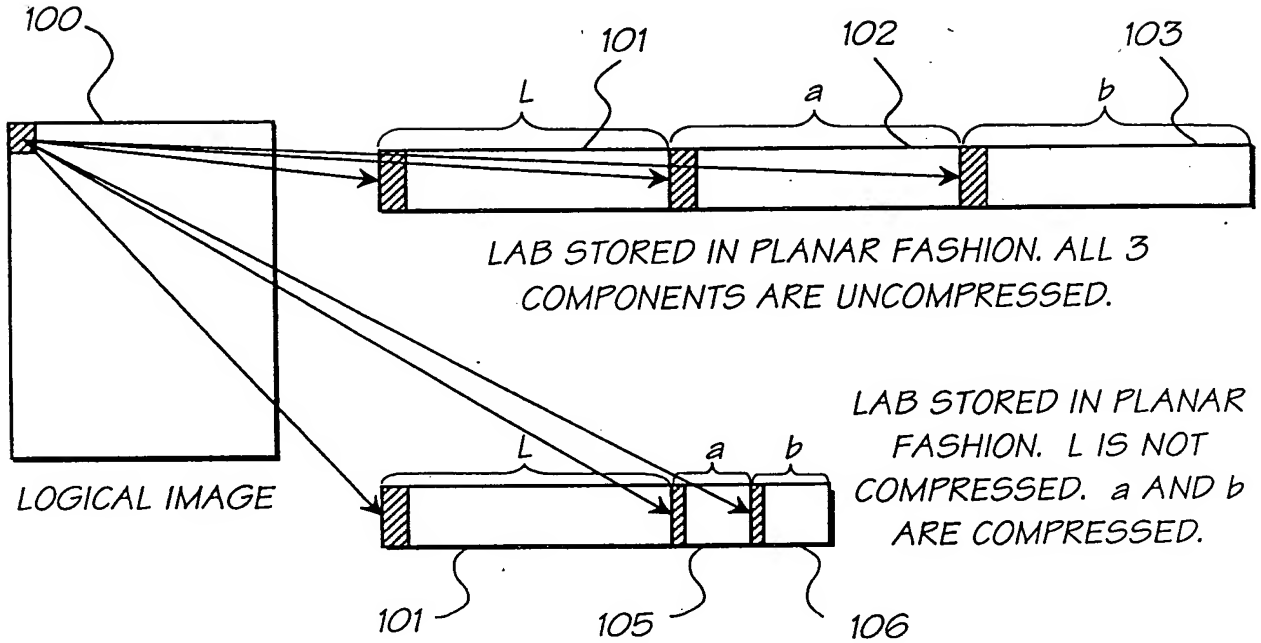


FIG. 31

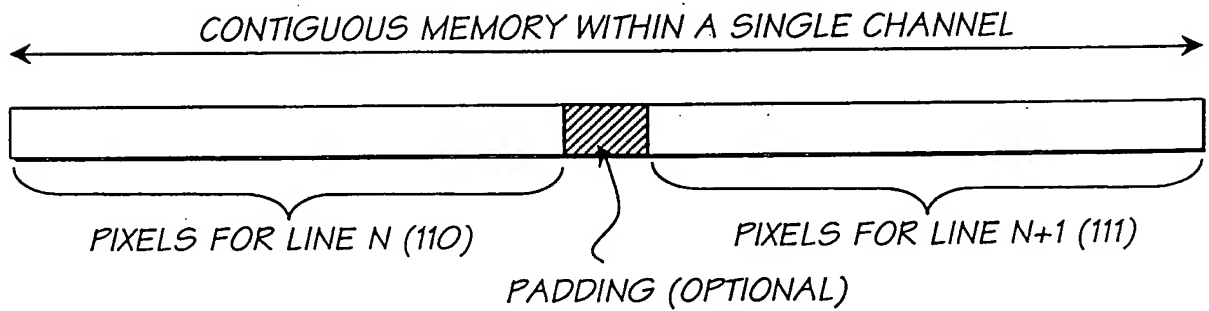


FIG. 32

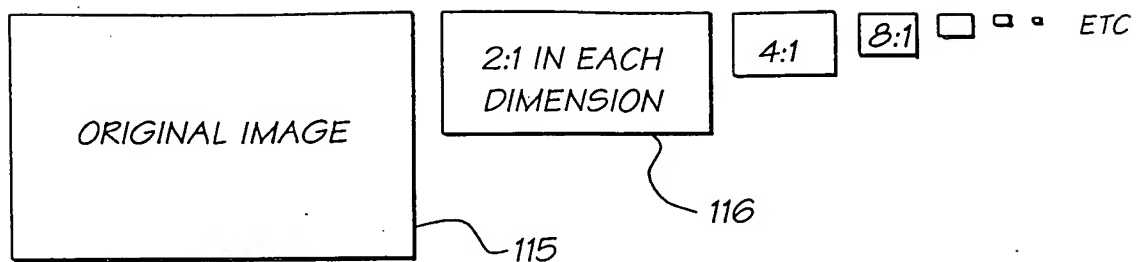


FIG. 33

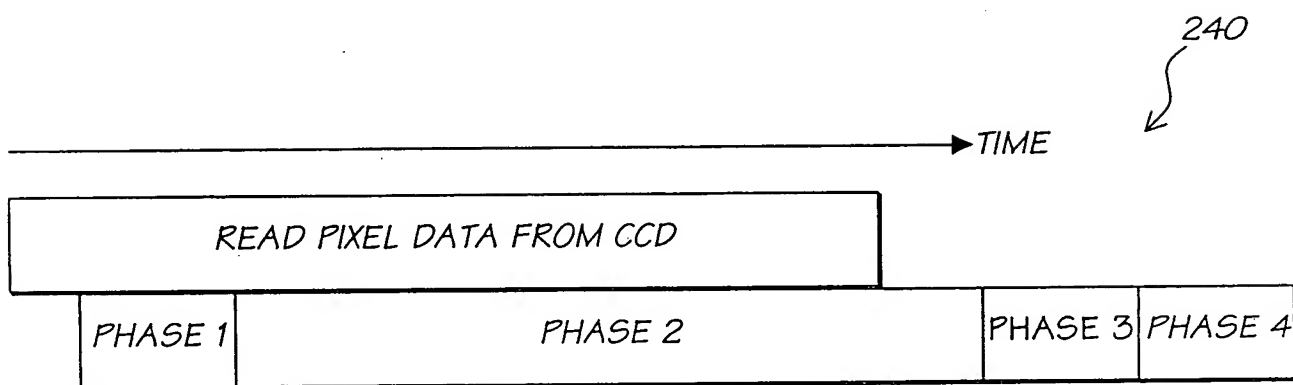


FIG. 34

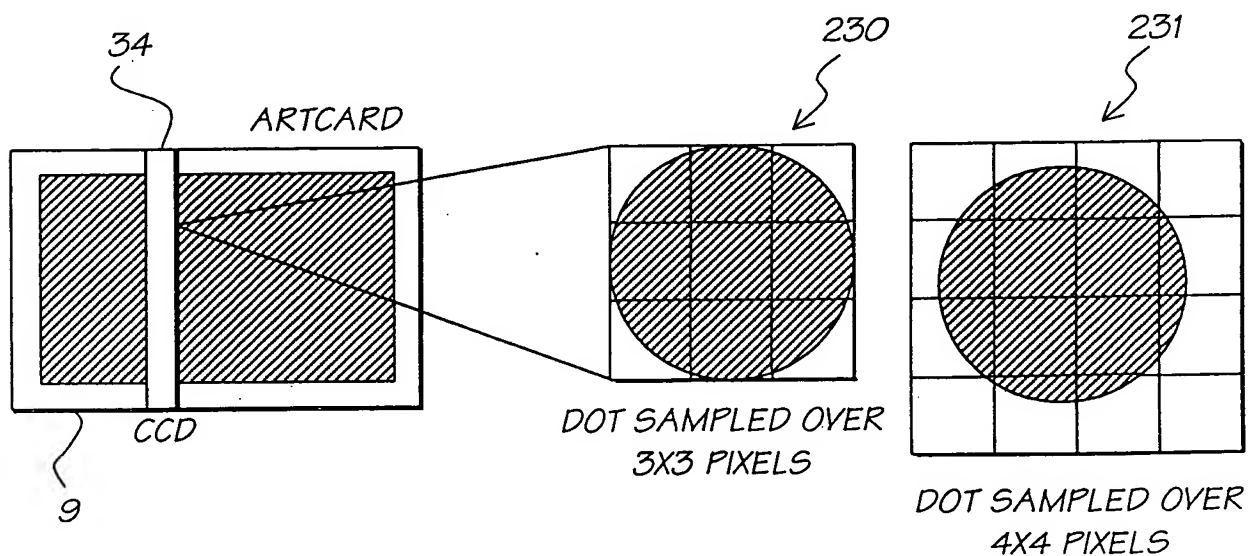


FIG. 35

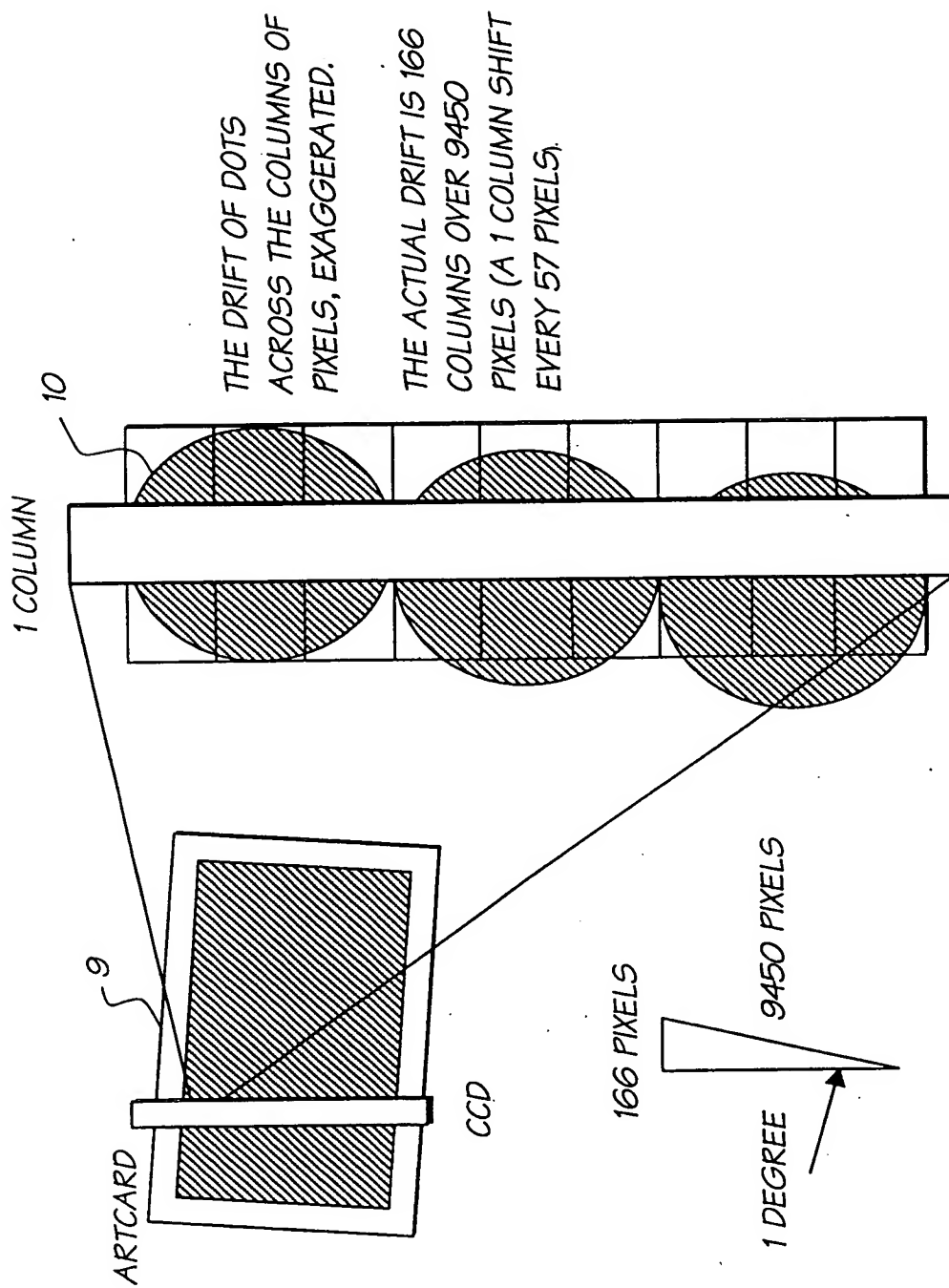


FIG. 36

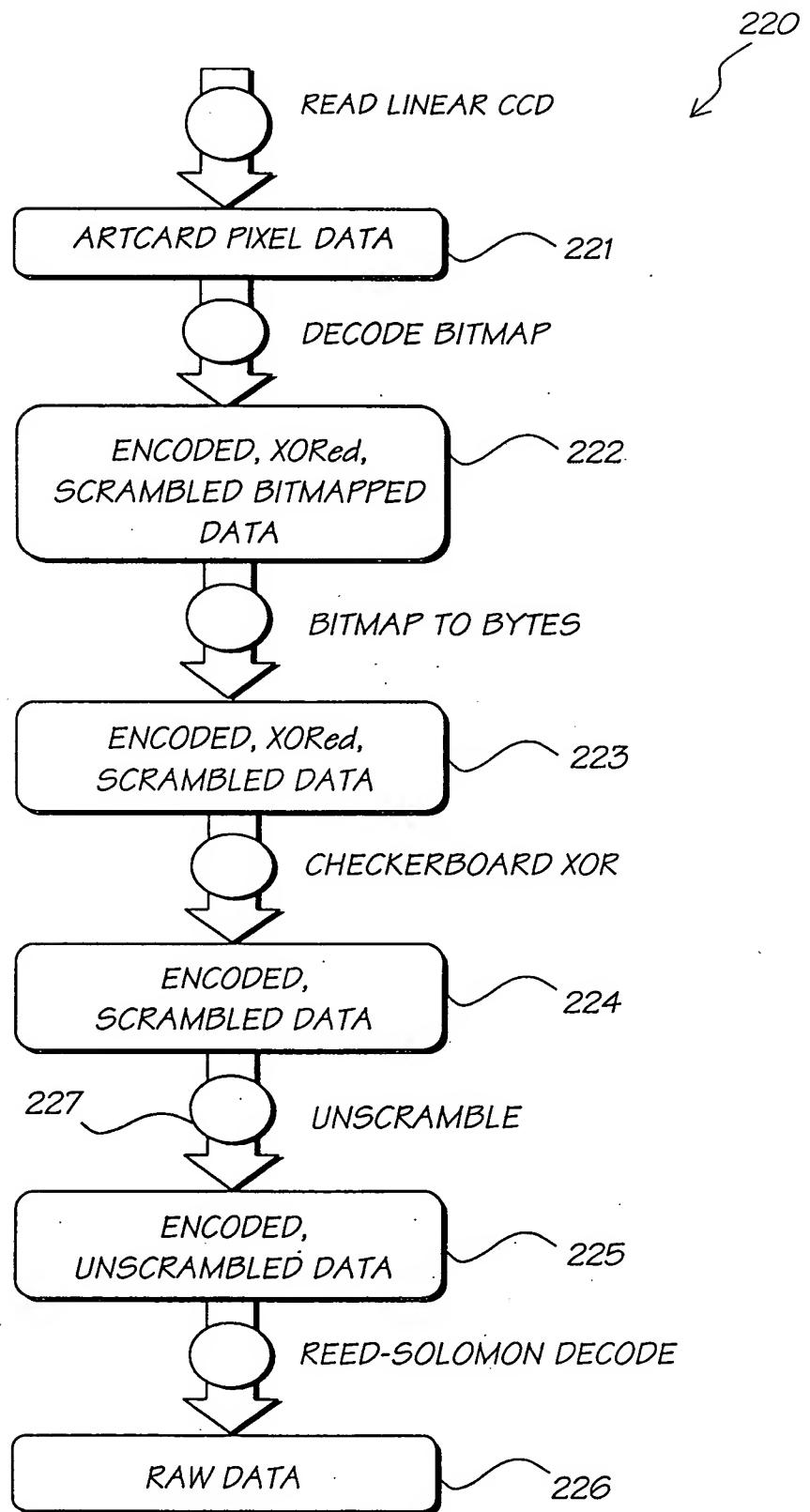
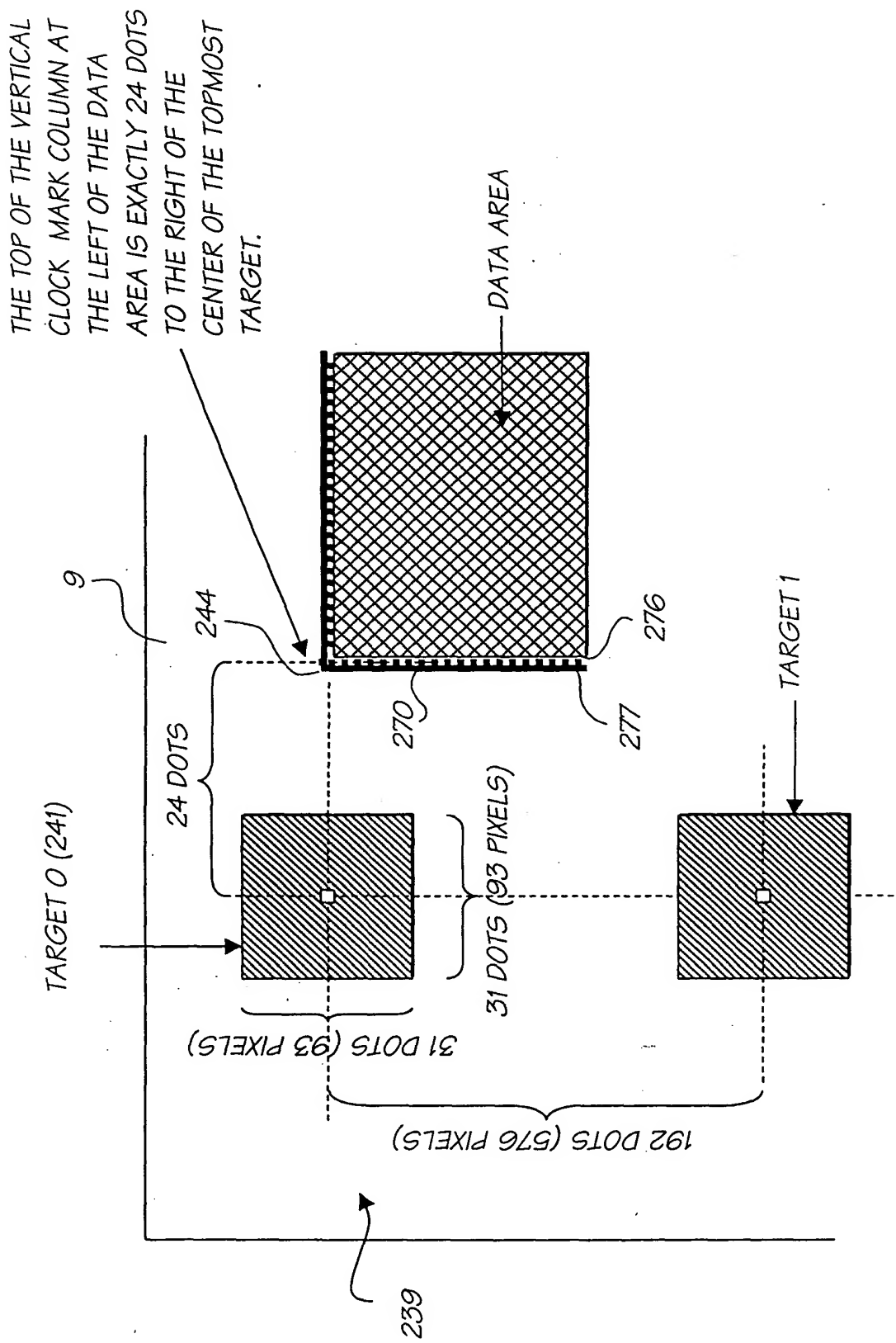


FIG. 37



THE TOP OF THE VERTICAL  
CLOCK MARK COLUMN AT  
THE LEFT OF THE DATA  
AREA IS EXACTLY 24 DOTS  
TO THE RIGHT OF THE  
CENTER OF THE TOPMOST  
TARGET.

FIG. 38

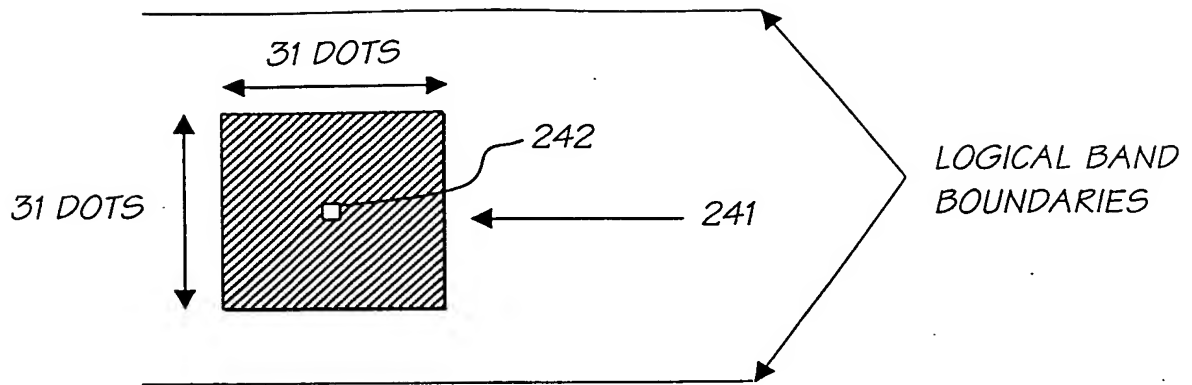


FIG. 39

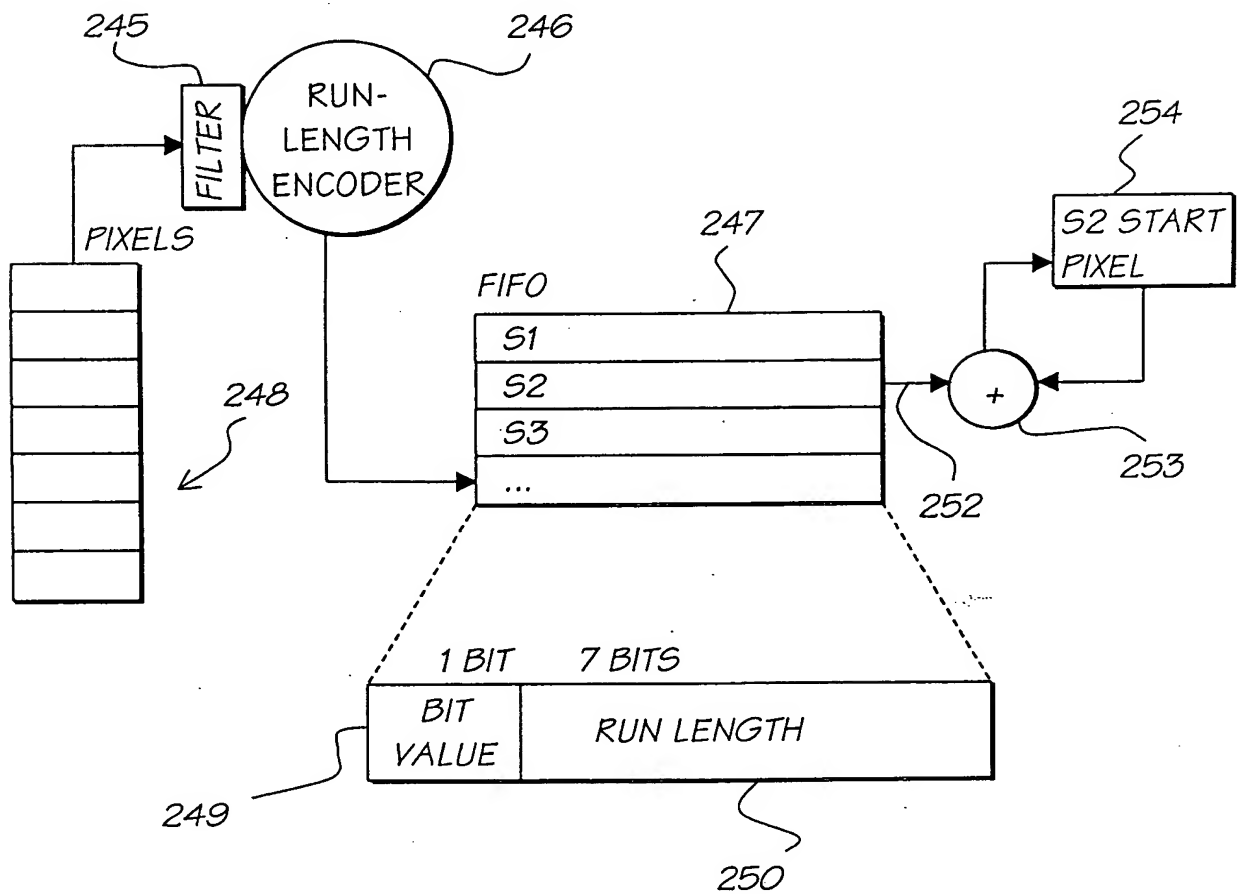


FIG. 40

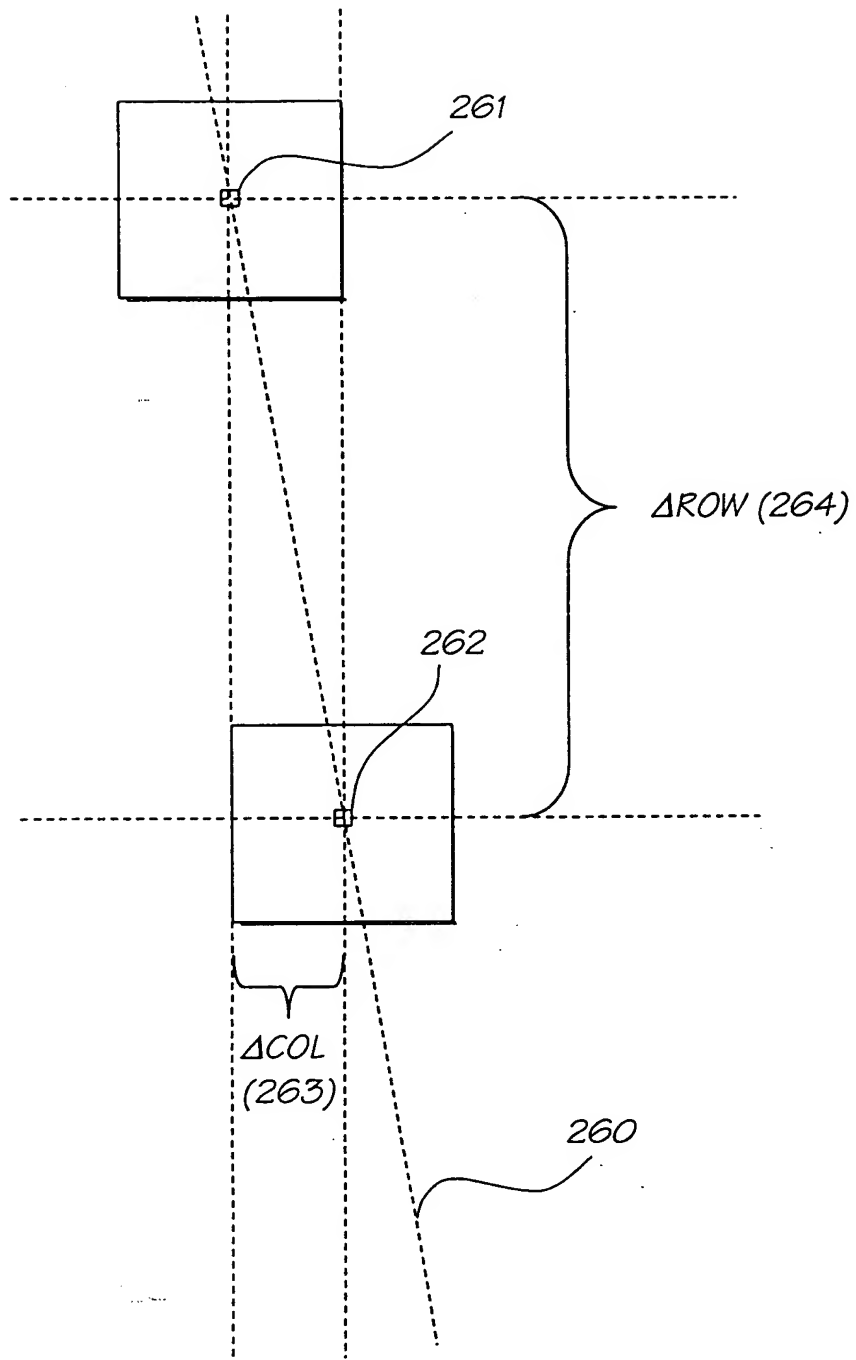


FIG. 41

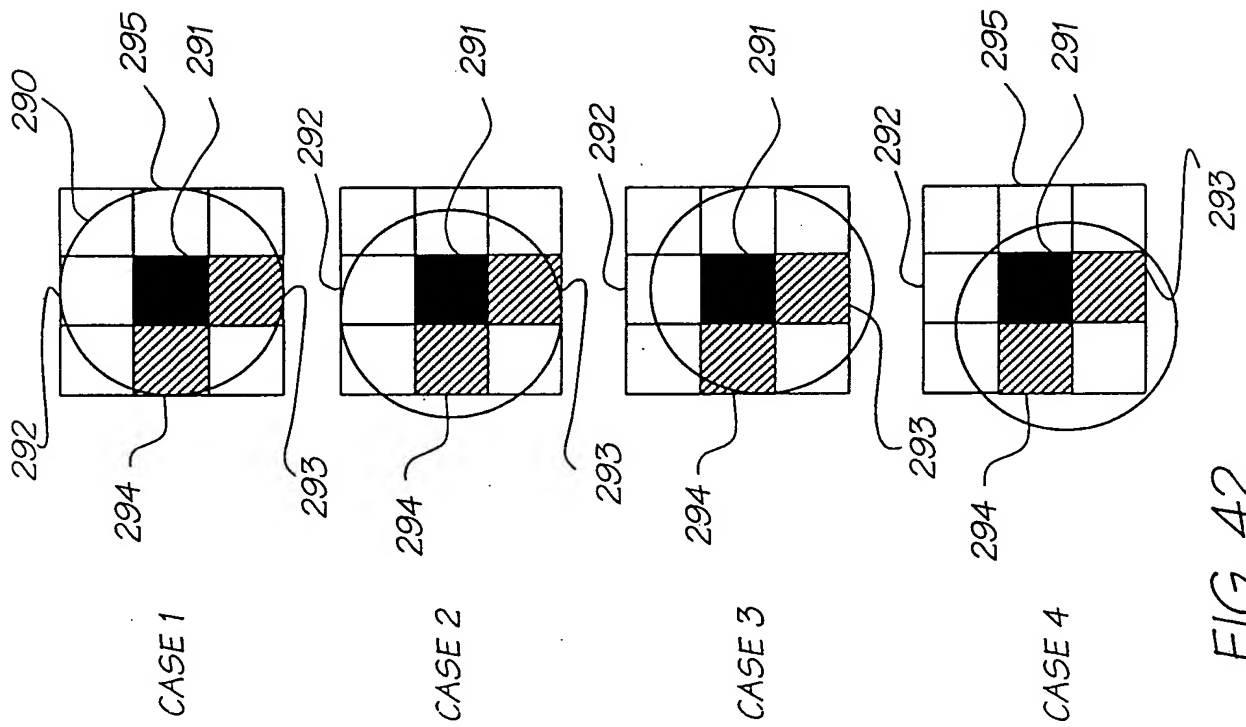


FIG. 42

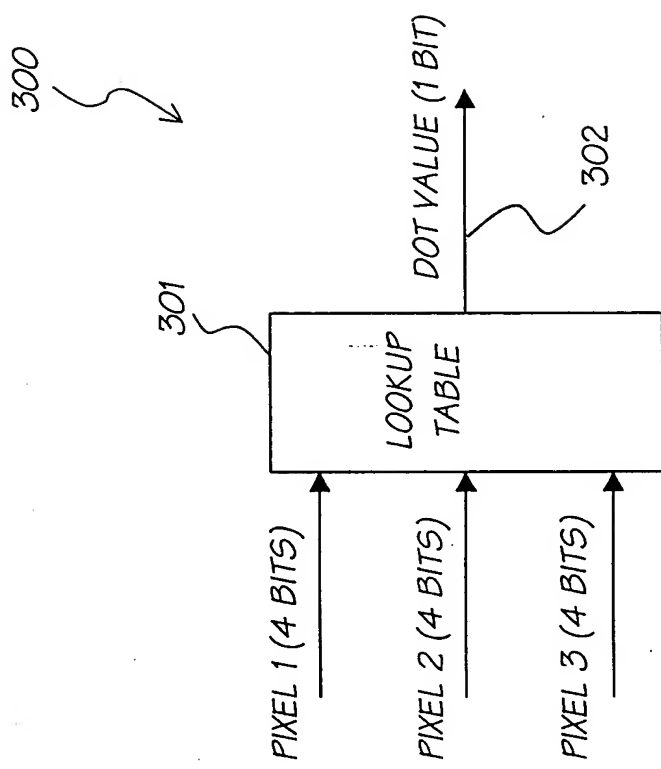


FIG. 43

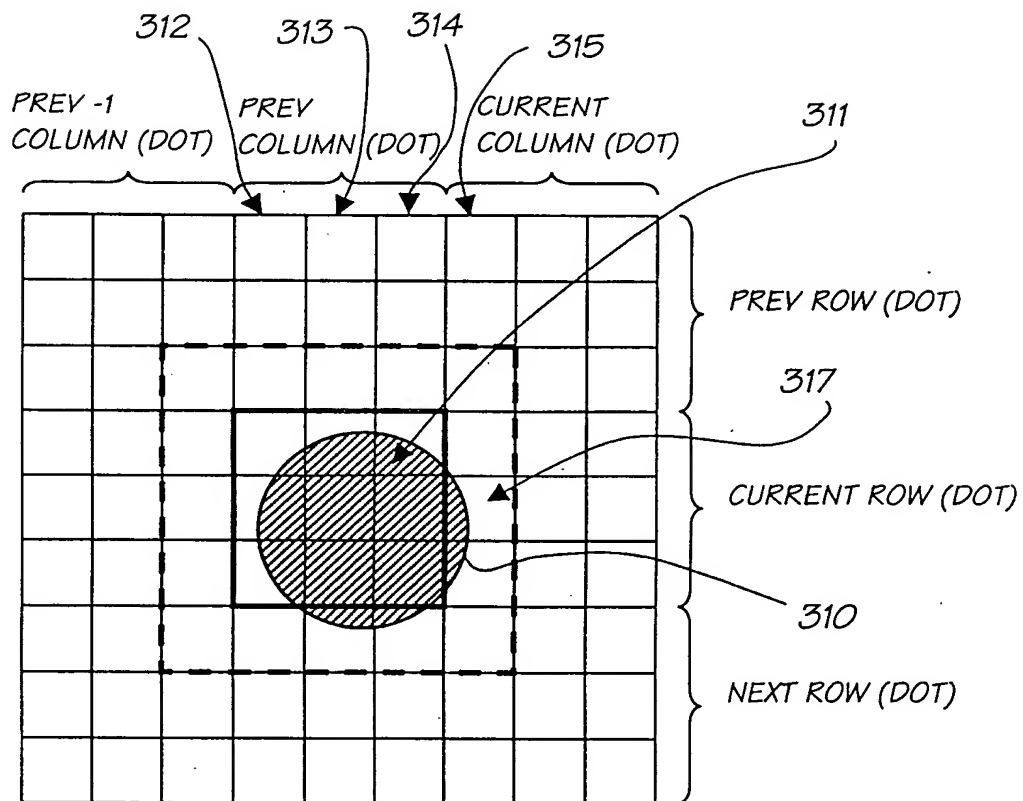


FIG. 44

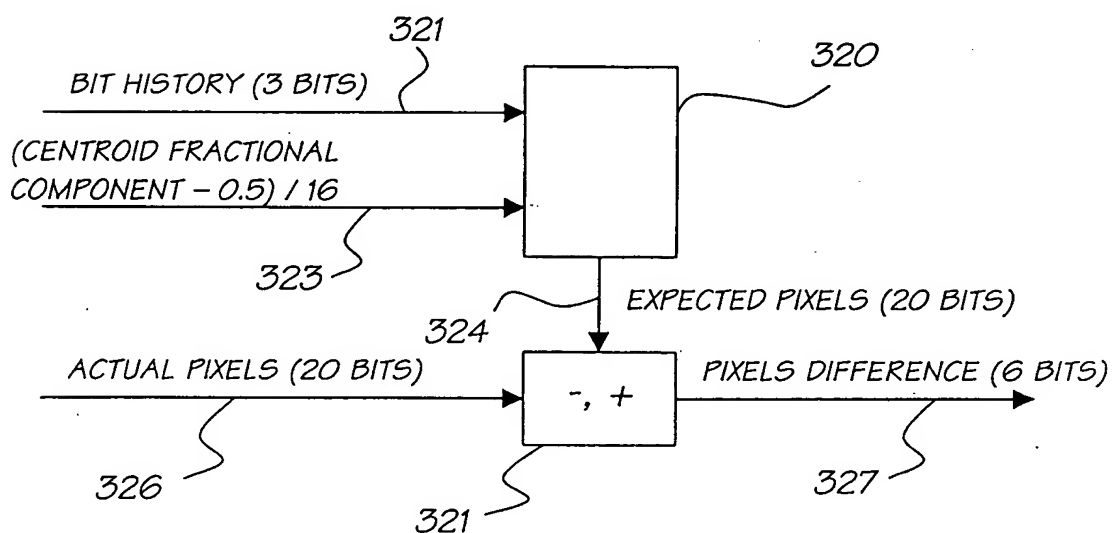


FIG. 45

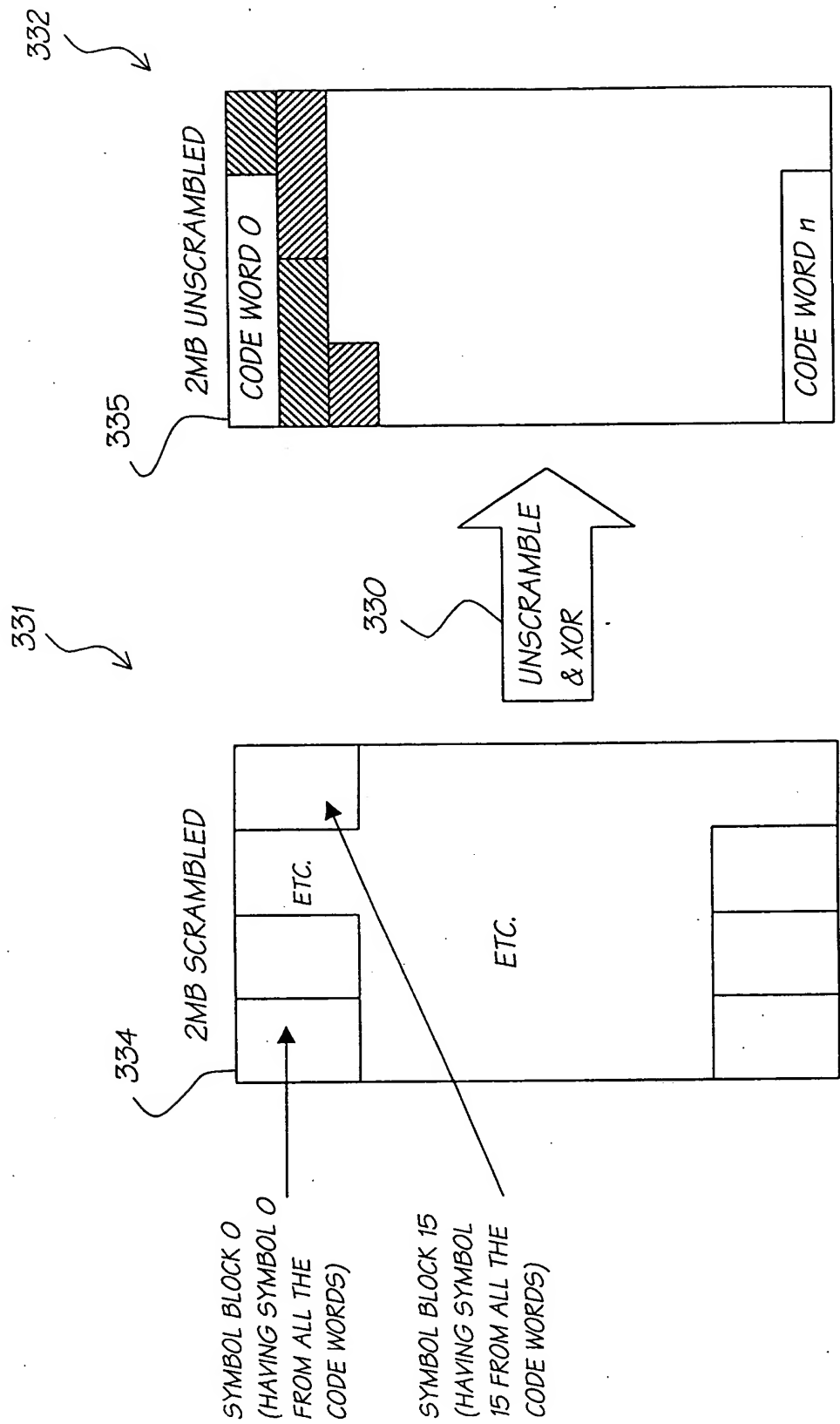


FIG. 46

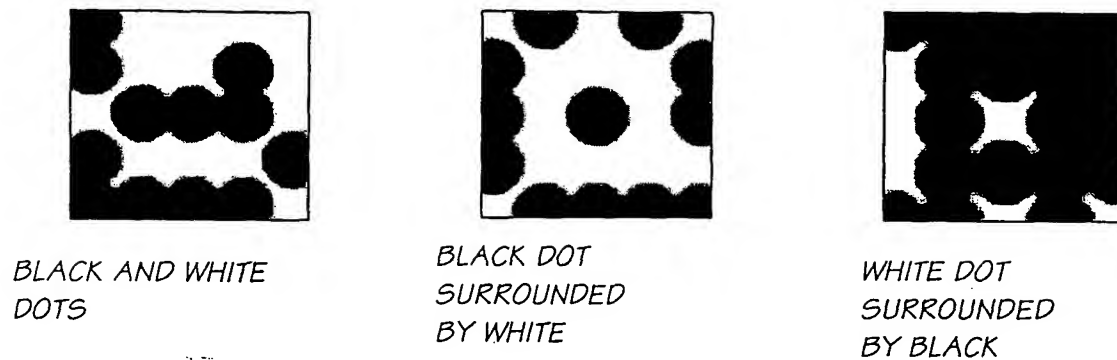


FIG. 47

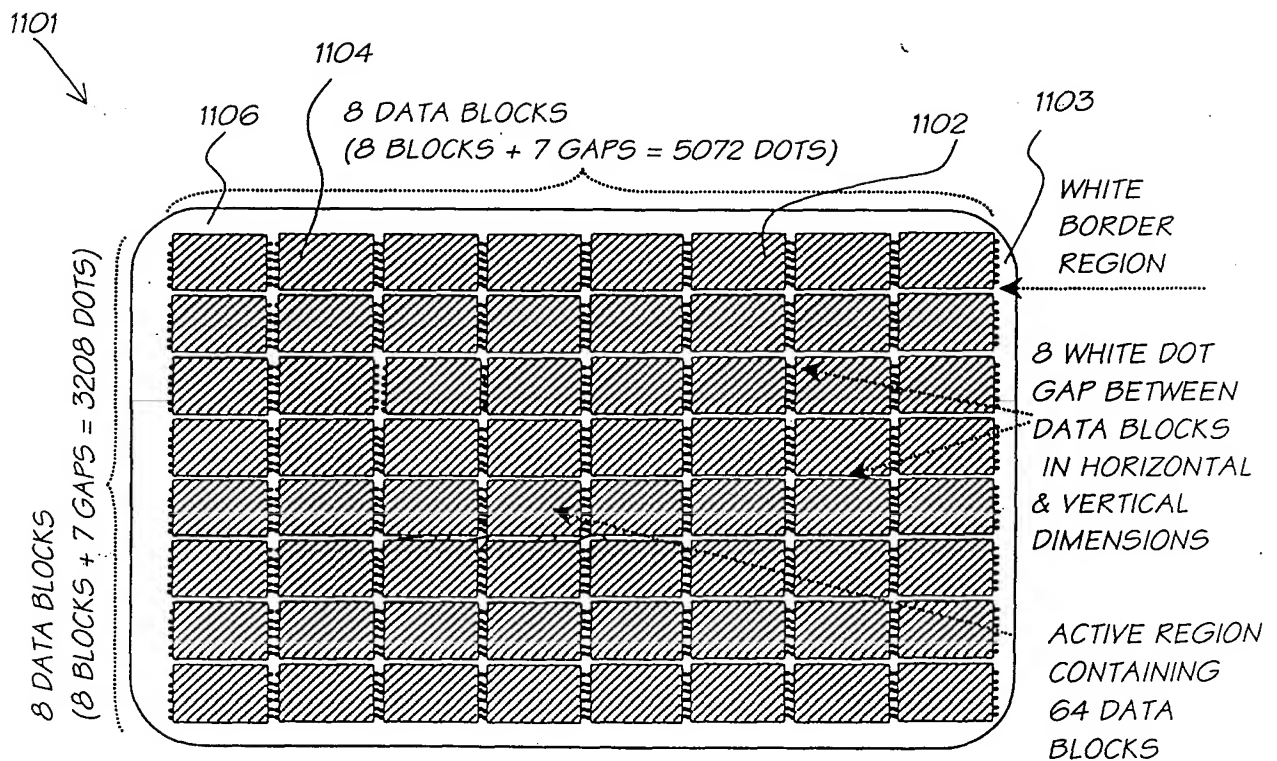


FIG. 48

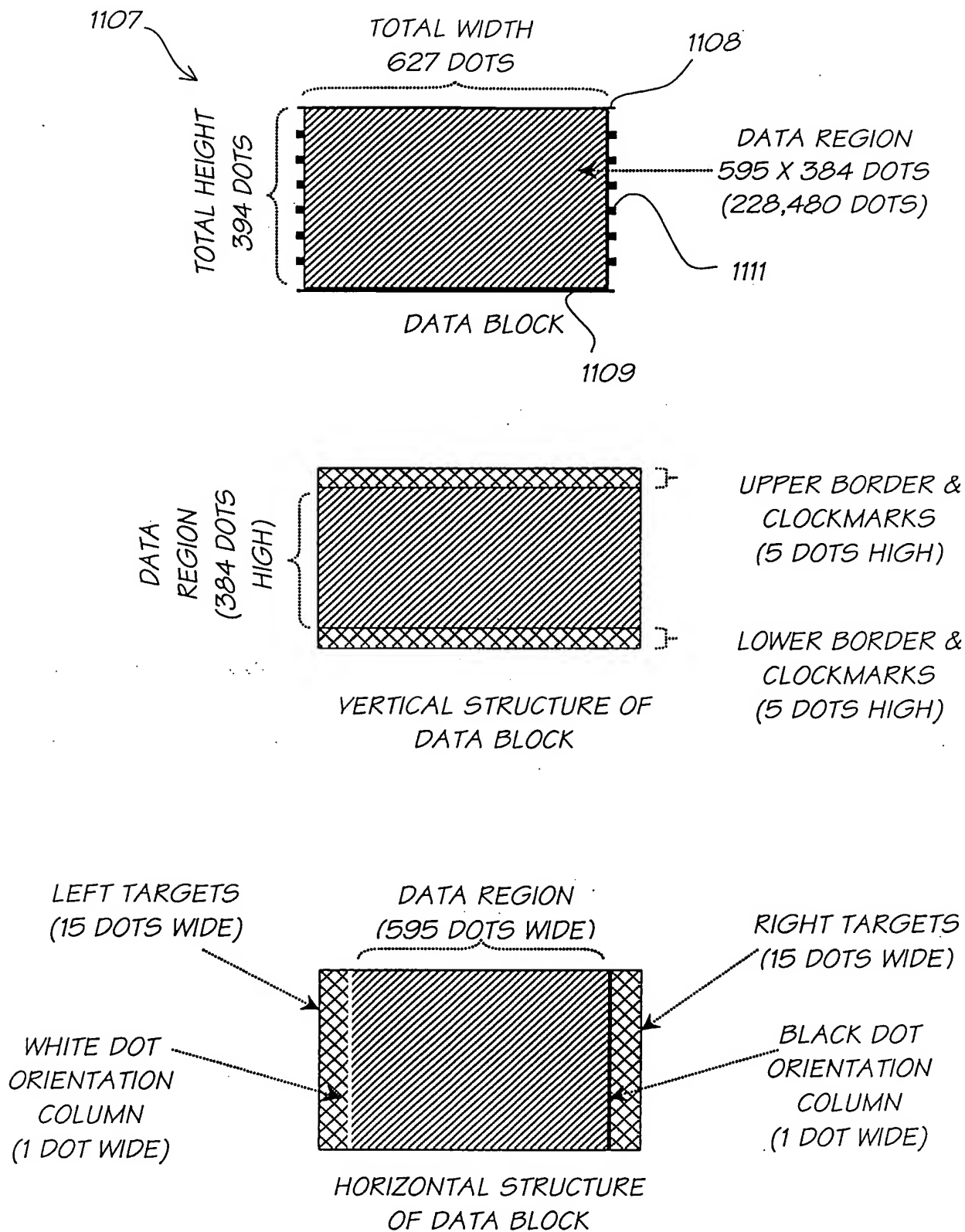


FIG. 49

FIG. 51

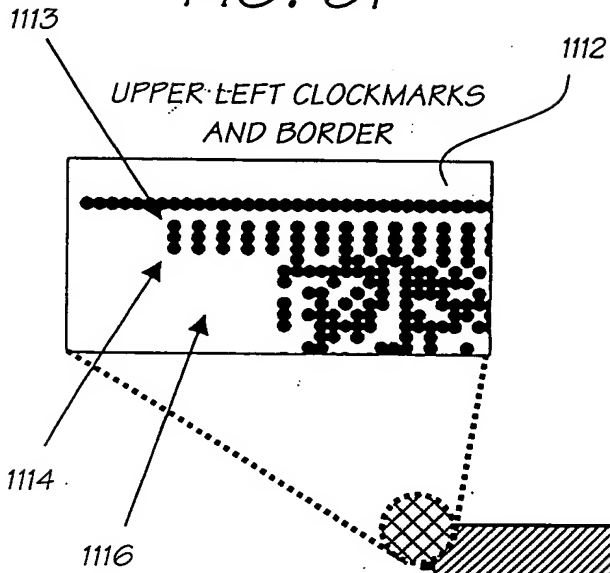


FIG. 52

LOWER RIGHT CLOCKMARKS  
AND BORDER

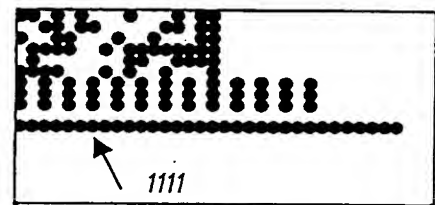


FIG. 50

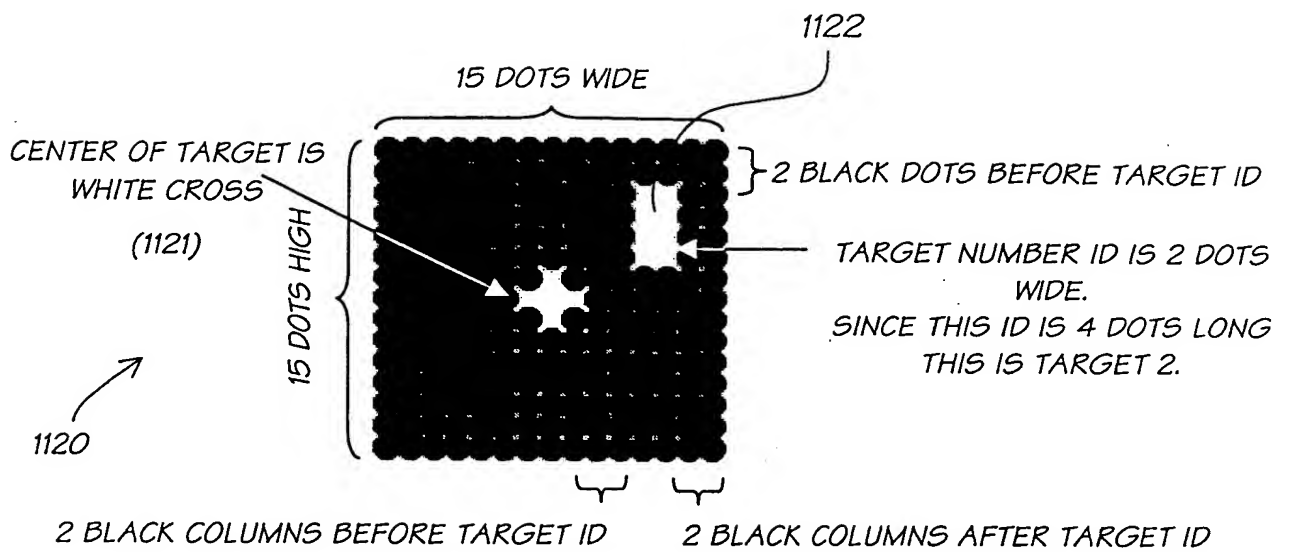


FIG. 53

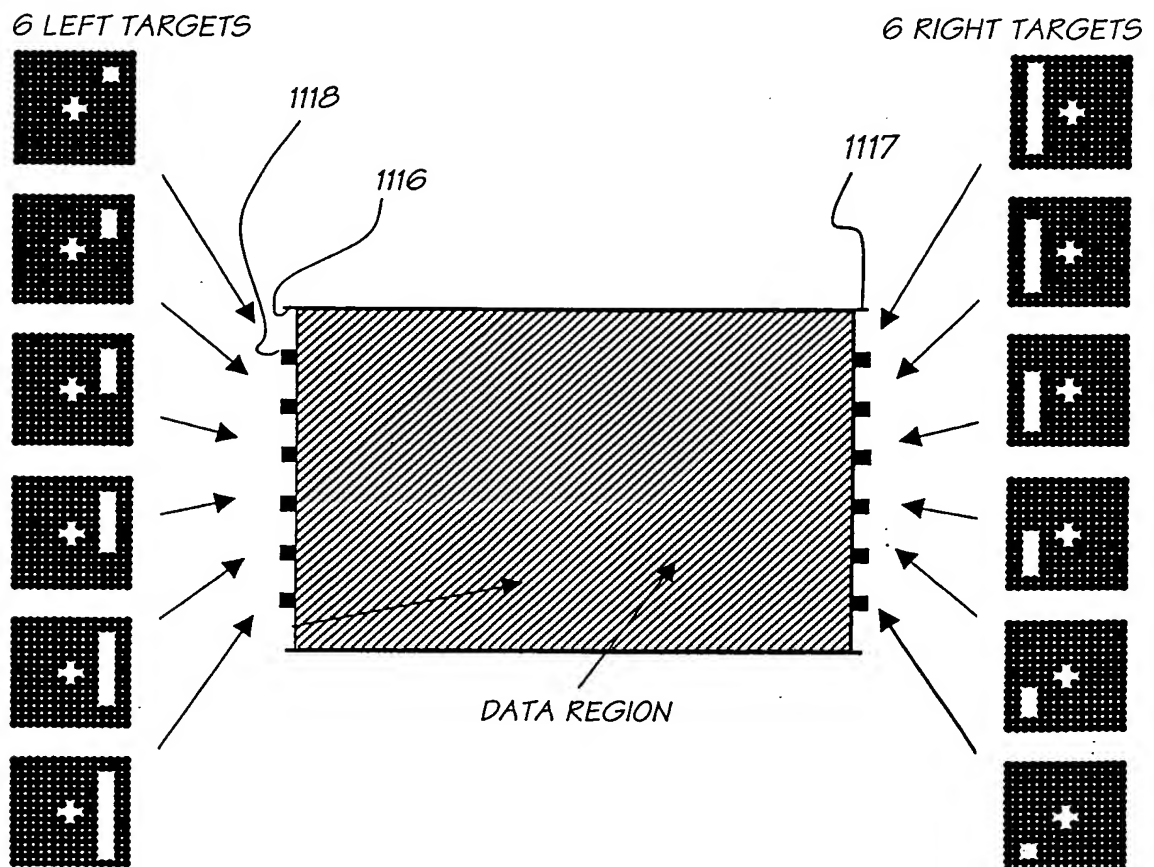


FIG. 54

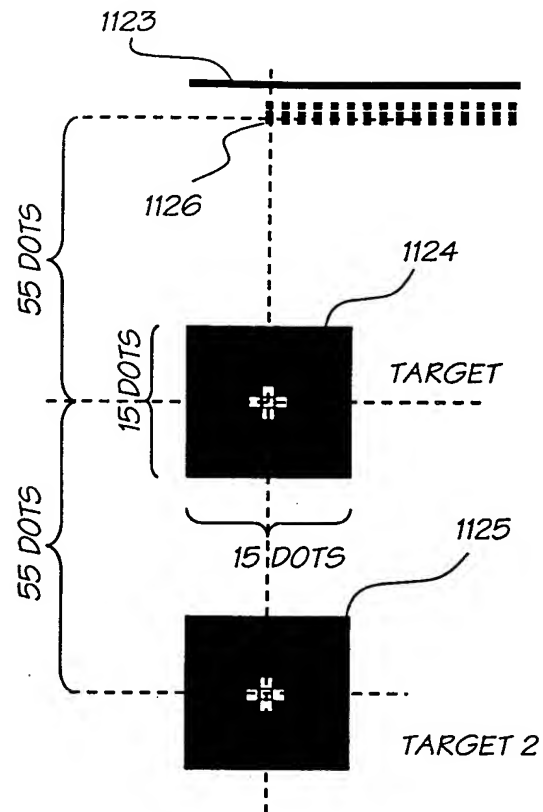


FIG. 55

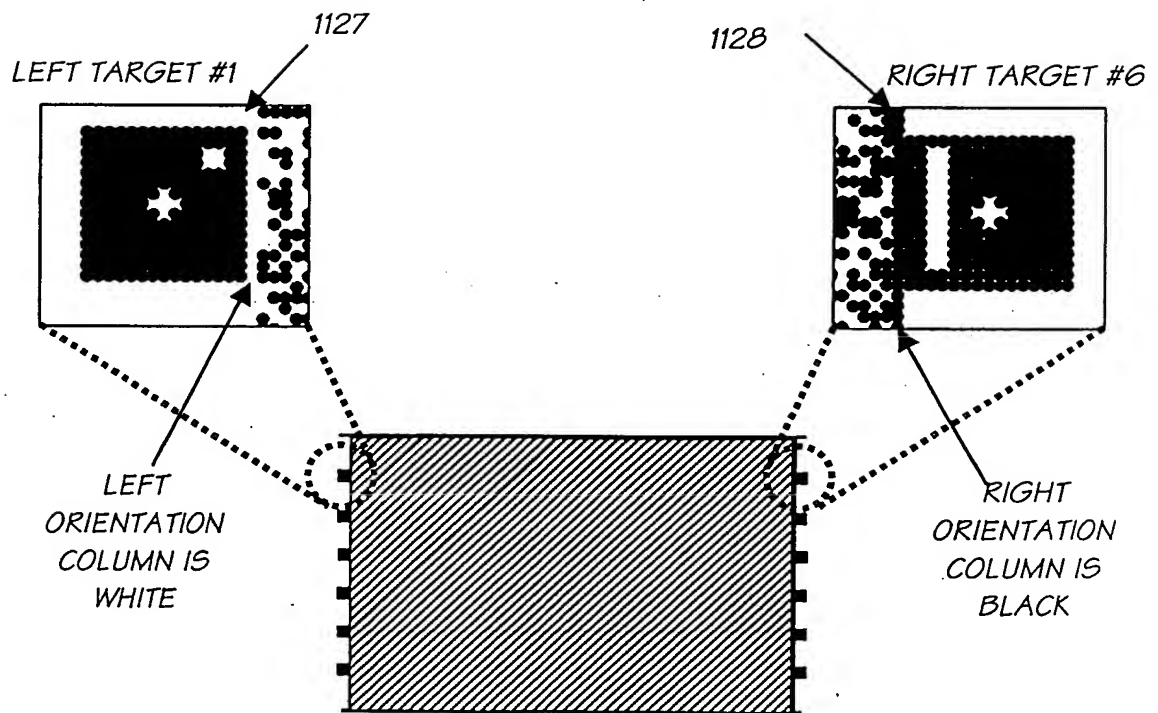


FIG. 56

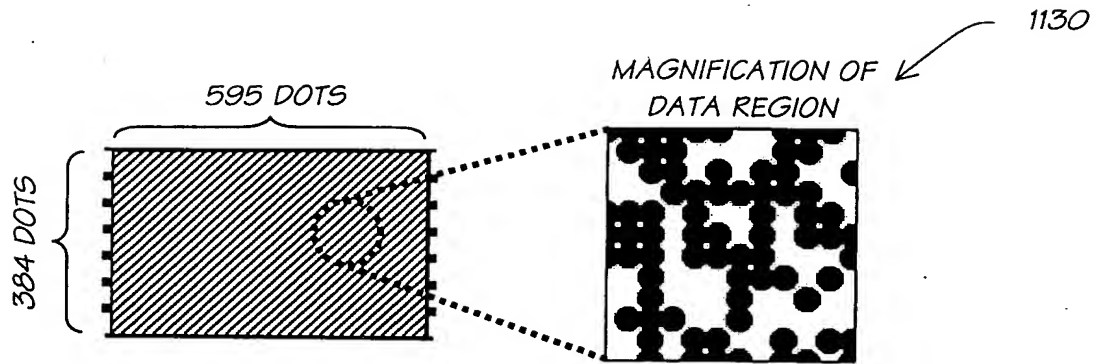


FIG. 57

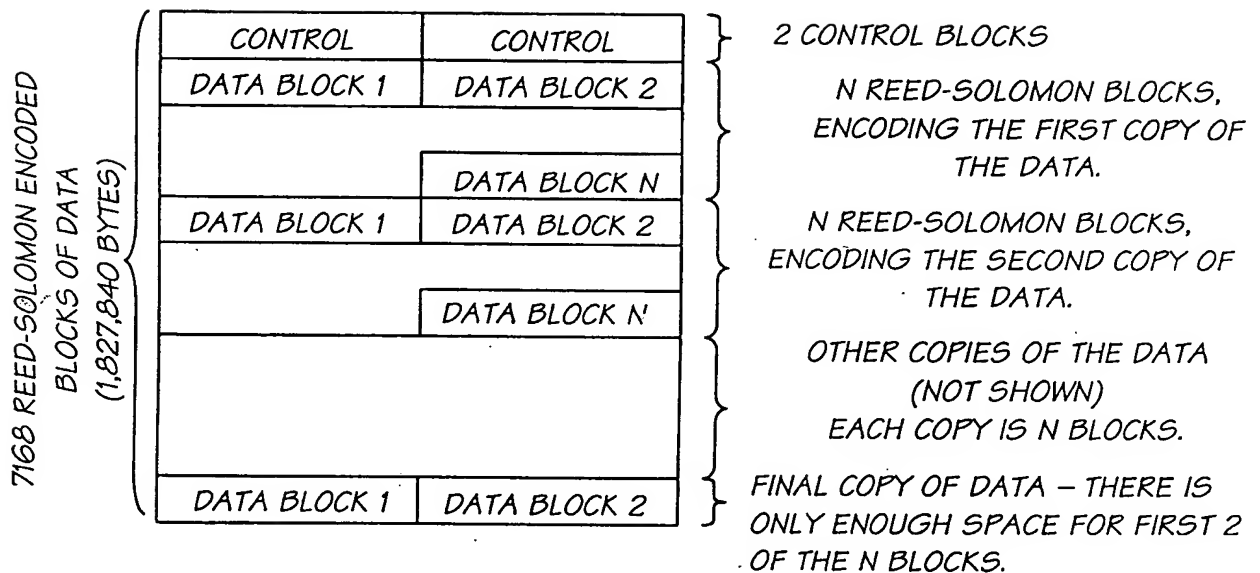


FIG. 58

00:	4F	00	3D	4F	00	3D	4F	00	3D	4F	00	3D
0C:	4F	00	3D	4F	00	3D	4F	00	3D	4F	00	3D
18:	4F	00	3D	4F	00	3D	4F	00	3D	4F	00	3D
24:	4F	00	3D	4F	00	3D	4F	00	3D	4F	00	3D
30:	4F	00	3D	4F	00	3D	4F	00	3D	4F	00	3D
3C:	4F	00	3D	4F	00	3D	4F	00	3D	4F	00	3D
48:	4F	00	3D	4F	00	3D	4F	00	3D	4F	00	3D
54:	4F	00	3D	4F	00	3D	4F	00	3D	4F	00	3D
60:	00	00	00	00	00	00	00	00	00	00	00	00
6C:	00	00	00	00	00	00	00	00	00	00	00	00
78:	00	00	00	00	00	00	00	00	00	00	00	00

32 COPIES OF THE 3 BYTE CONTROL INFORMATION

RESERVED BYTES ARE 0

FIG. 59

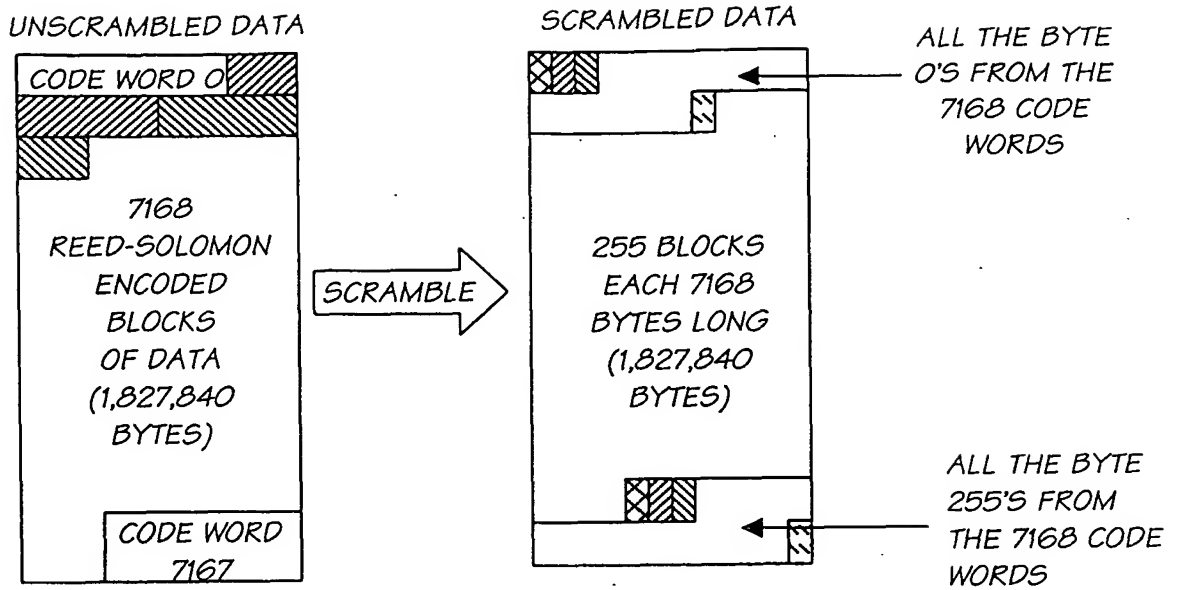


FIG. 60

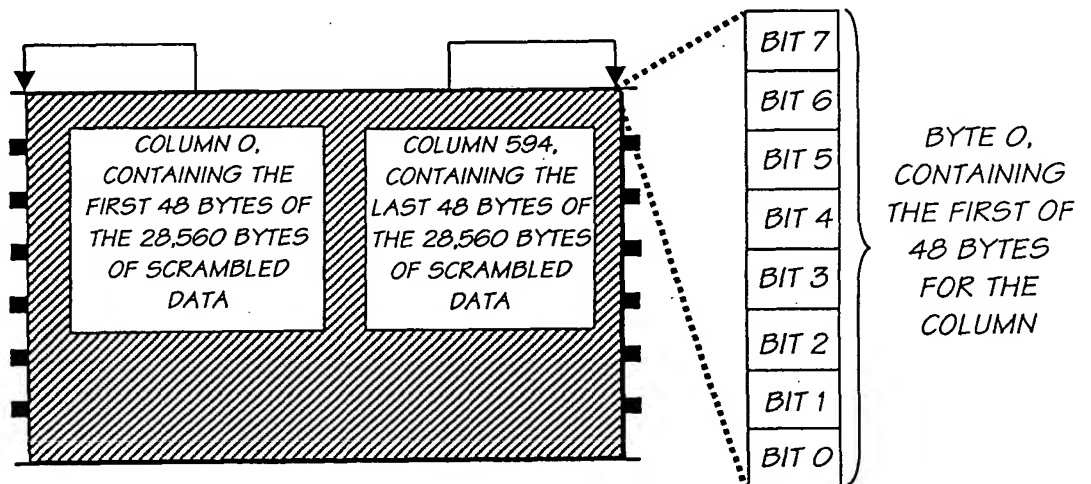


FIG. 61

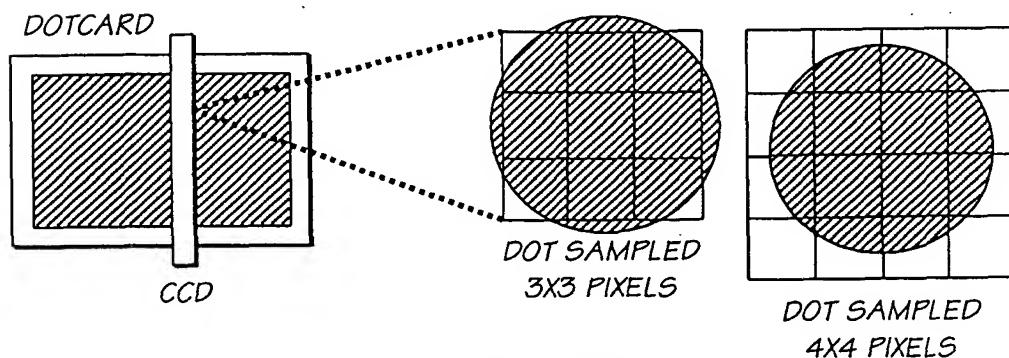


FIG. 62

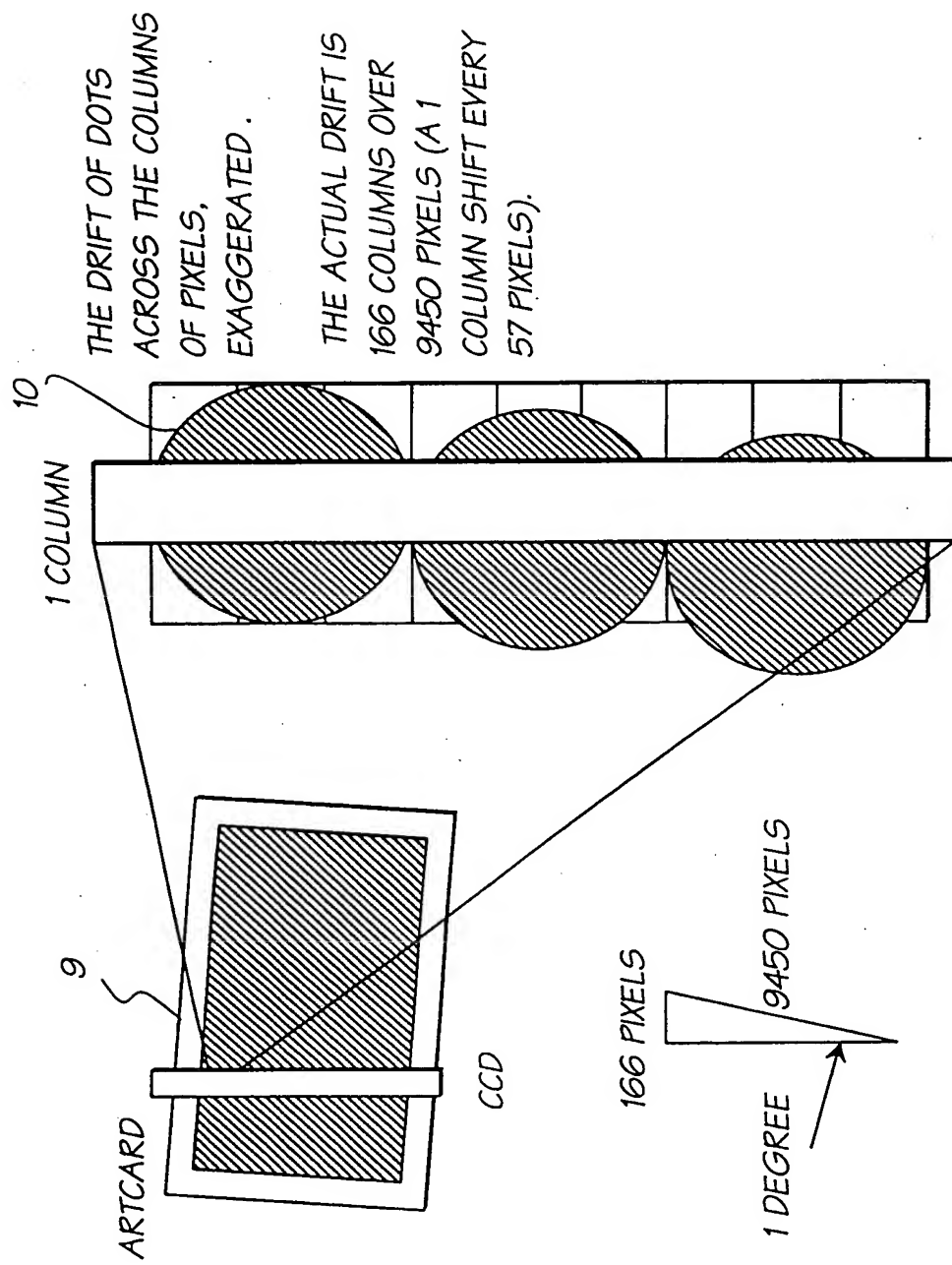


FIG. 63

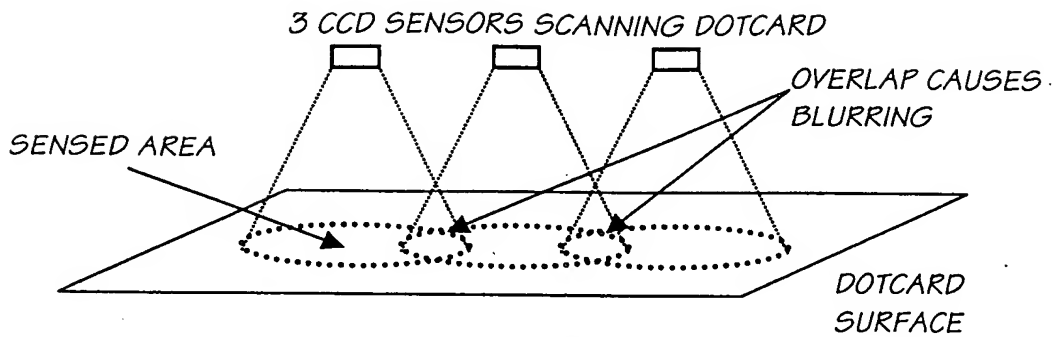


FIG. 64

RANGE OF BLACK DOTS  
(FREQUENCY DISTRIBUTION)

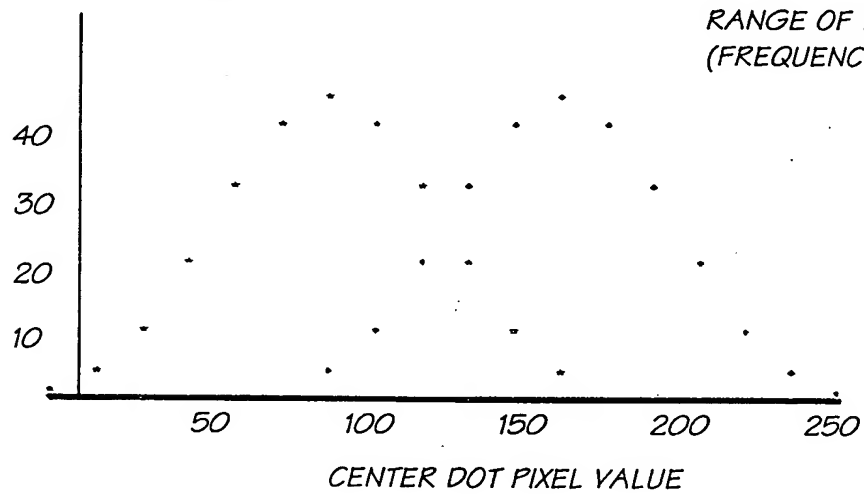


FIG. 65

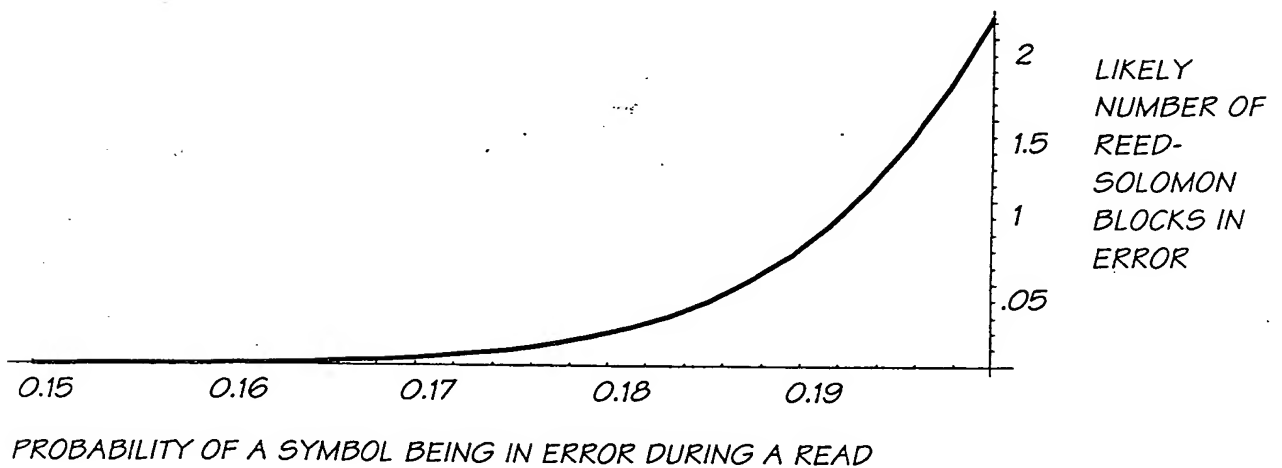
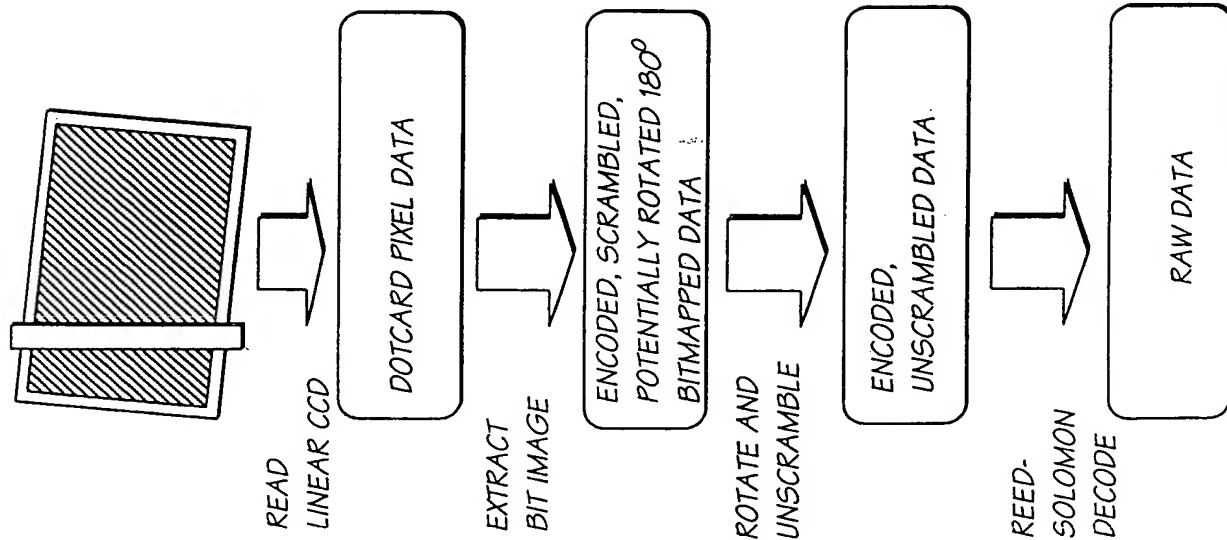


FIG. 66



APPROXIMATE DATA SIZES FOR 1600 DPI DOTCARD

86MM + 1MM IN HORIZONTAL DIMENSION FOR 1° ROTATION = 87MM

87MM = 16,252 SCANLINES

16,440 SCANLINES @ 11,000 PIXELS PER SCANLINE = 180,840,000 PIXELS

180,840,000 PIXELS @ 1 BYTE PER PIXEL = 180,840,000 BYTES = 172.5 MB

64 DATA BLOCKS, EACH CONTAINING 597 COLUMNS (595 DATA REGION COLUMNS AND 2 ORIENTATION COLUMNS), @ 48 BYTES PER COLUMN = 28,656 BYTES PER DATA BLOCK FOR A TOTAL OF 1,833,984 BYTES.

64 DATA BLOCKS, EACH CONTAINING 112 ENCODED REED SOLOMON BLOCKS, @ 255 BYTES PER REED SOLOMON BLOCK FOR A TOTAL OF 1,827,840 BYTES.

DECODED DATA, WITH A MAXIMUM SIZE OF 910,082 BYTES.  
(64 X 112 X 127 - (2 CONTROL BLOCKS @ 127 BYTES))

FIG. 67

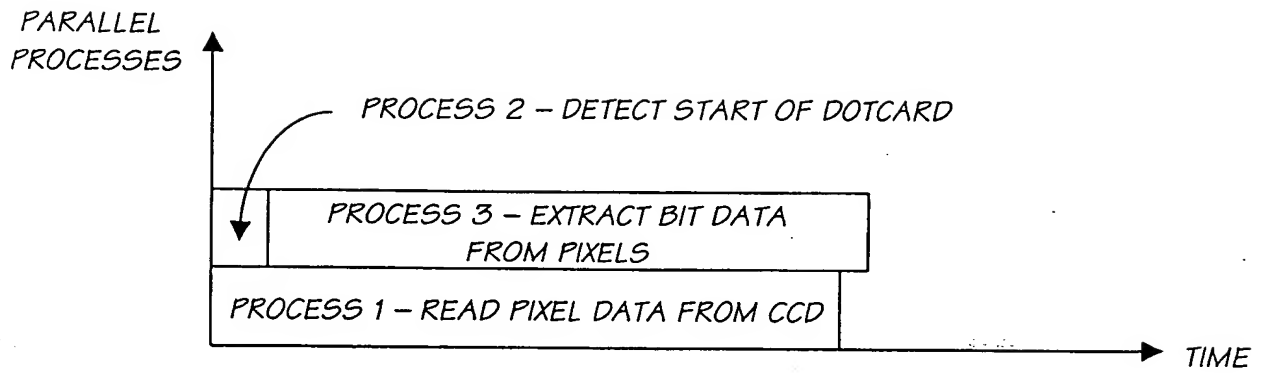


FIG. 68

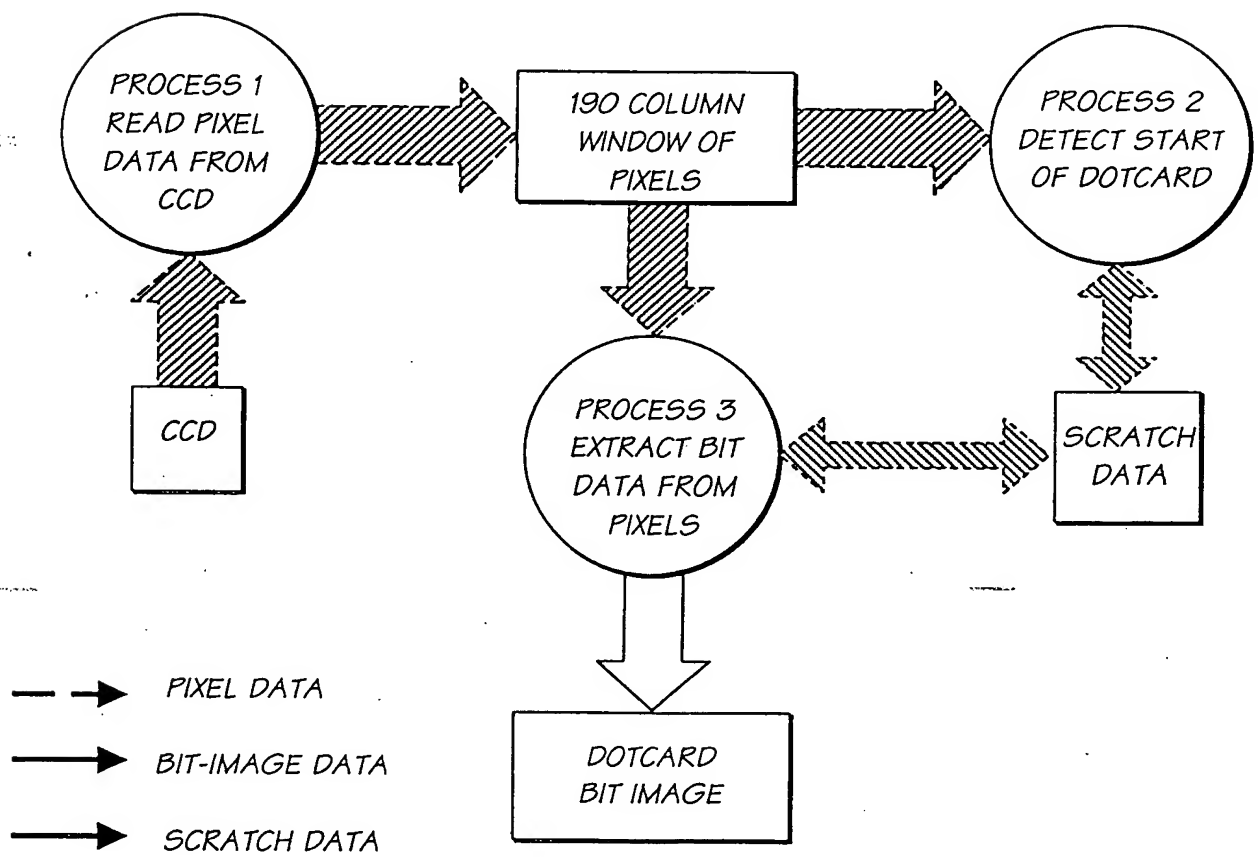


FIG. 69

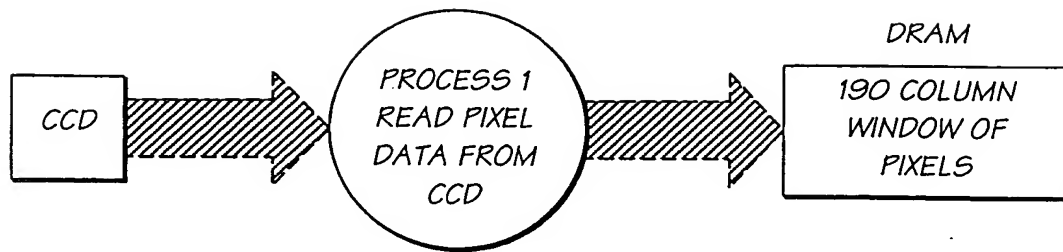


FIG. 70

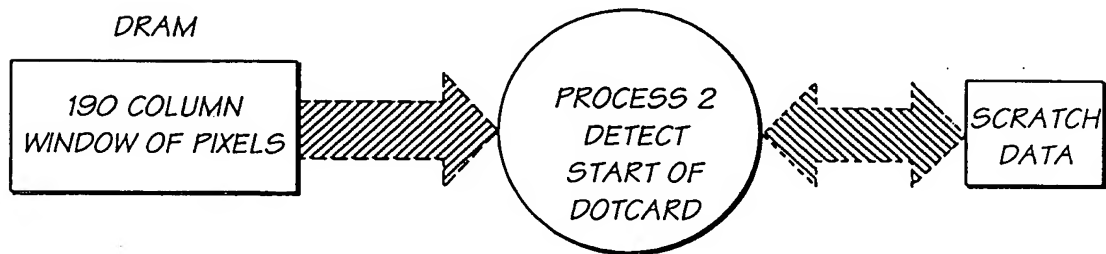


FIG. 71

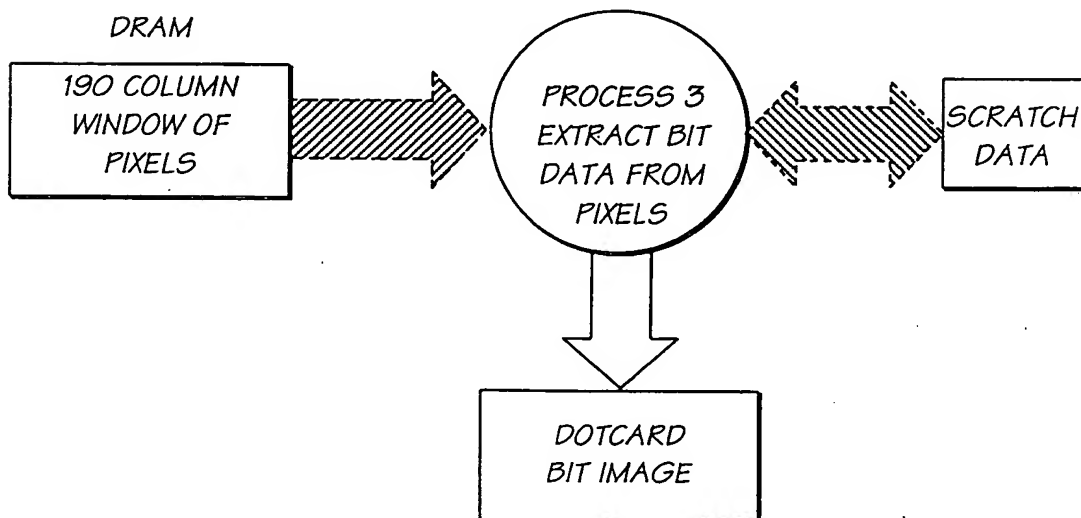


FIG. 72

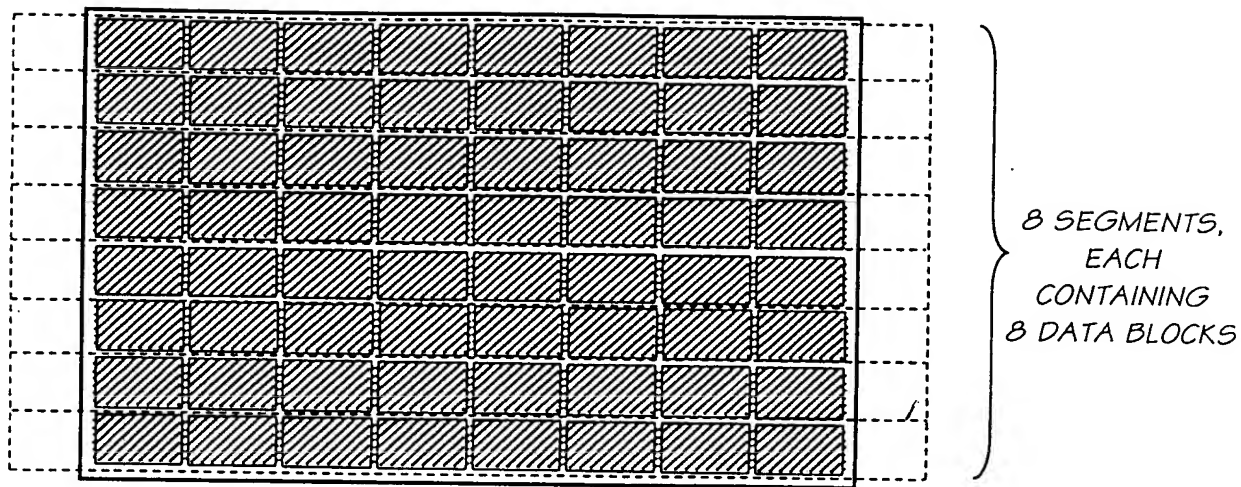


FIG. 73

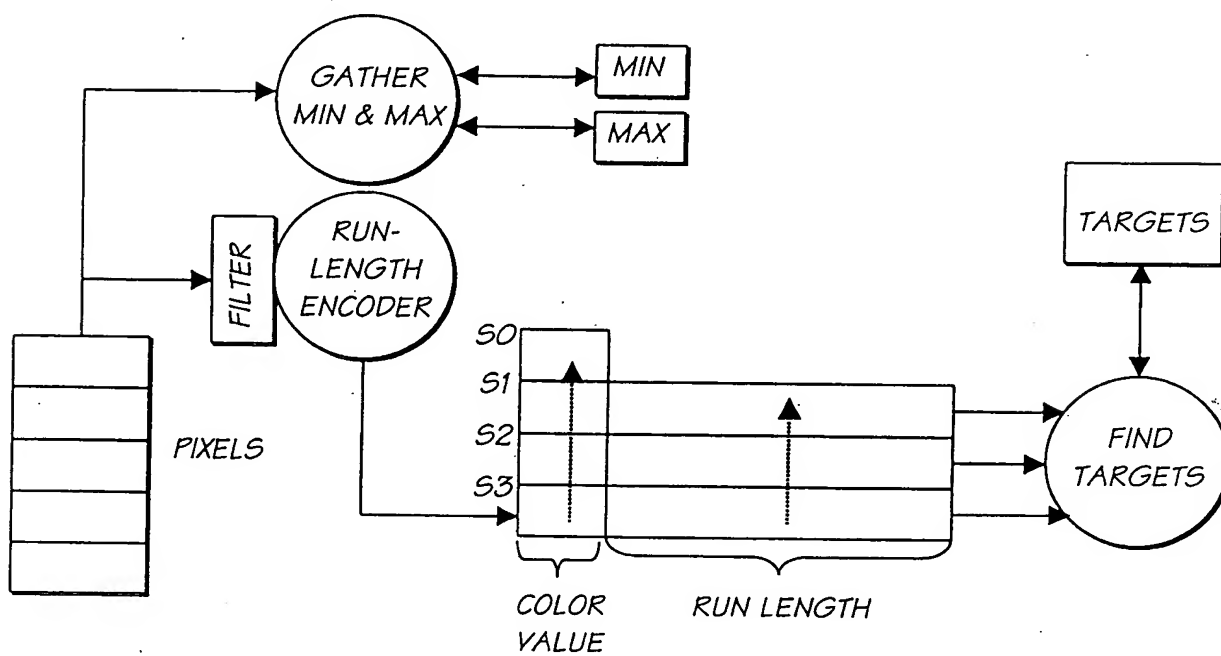


FIG. 74

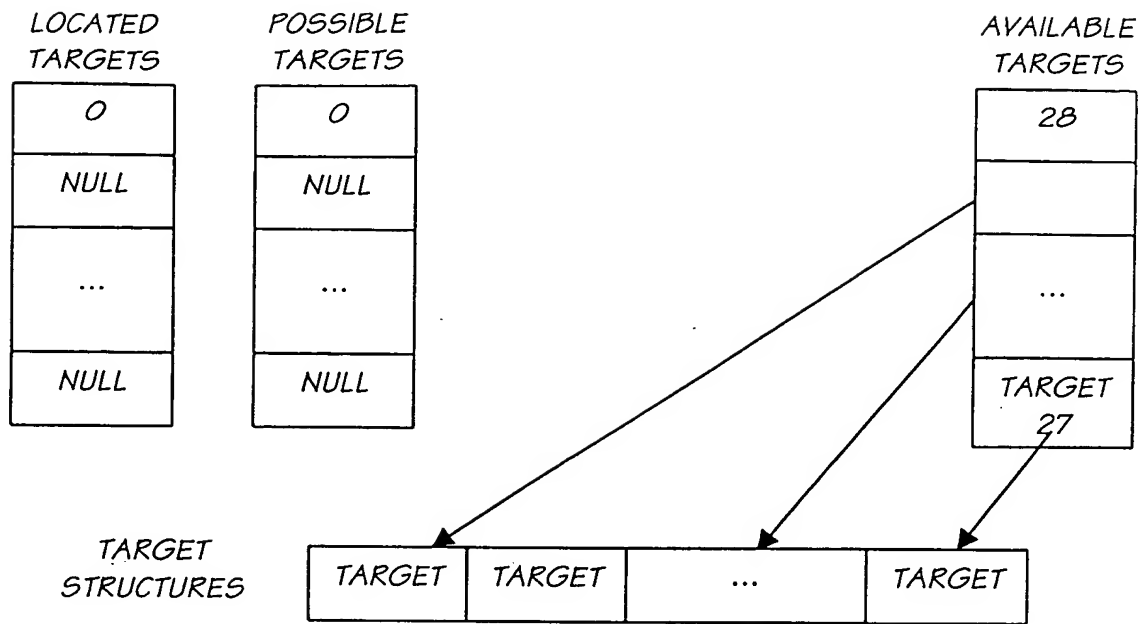


FIG. 75

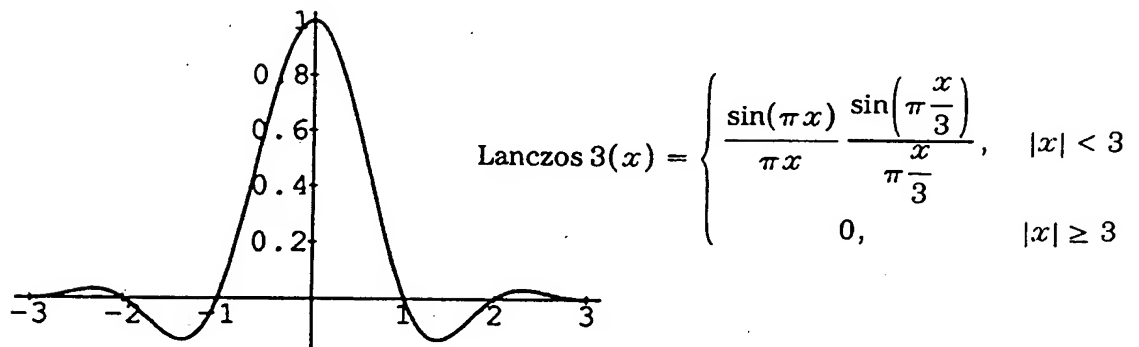


FIG. 76

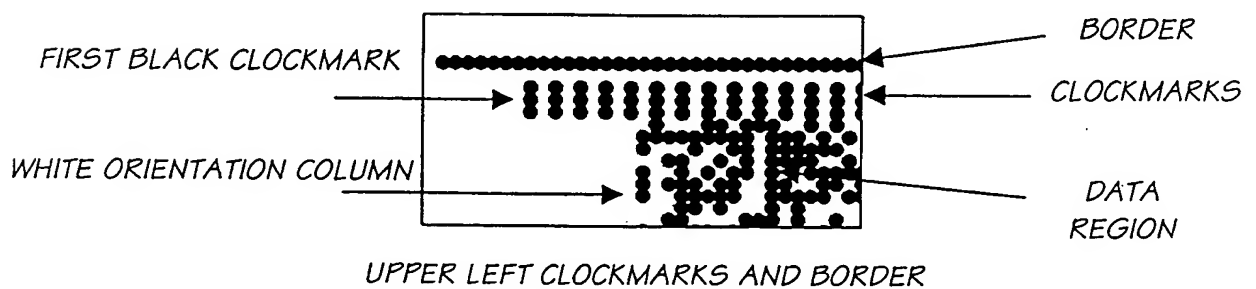


FIG. 77

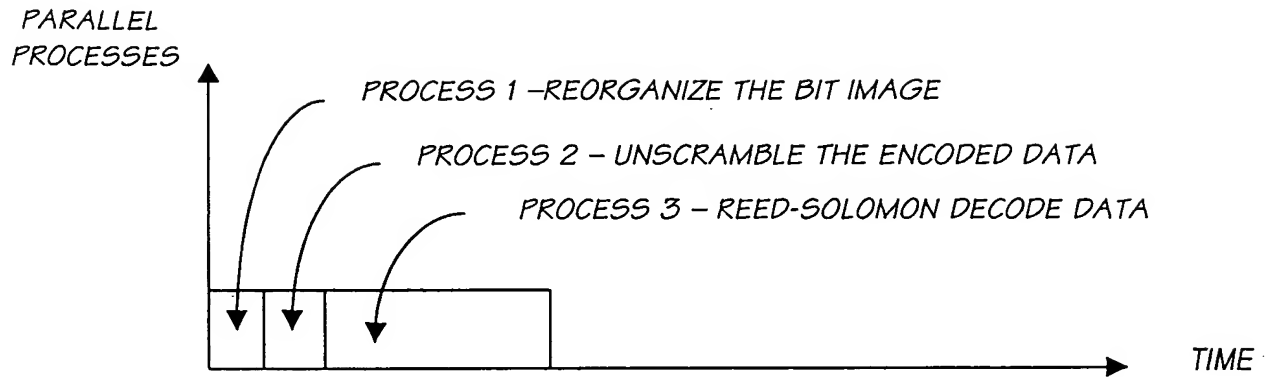


FIG. 78

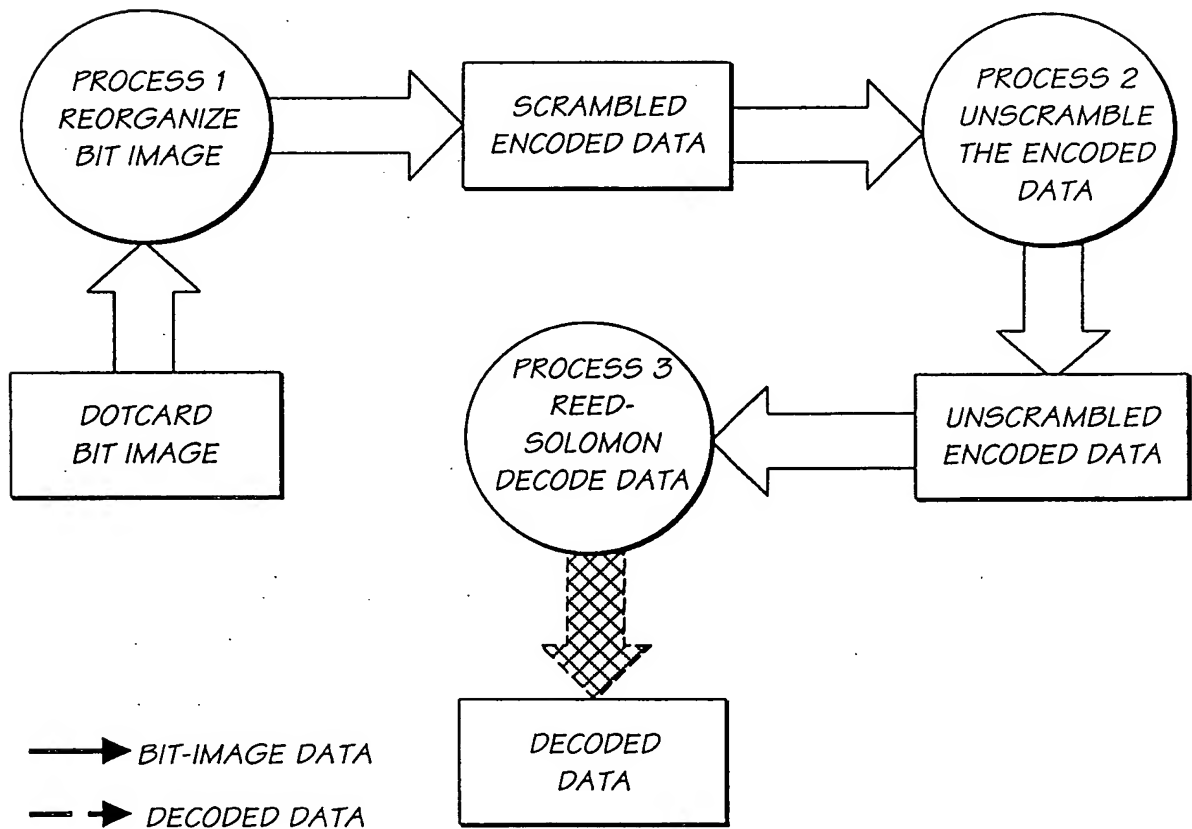


FIG. 79

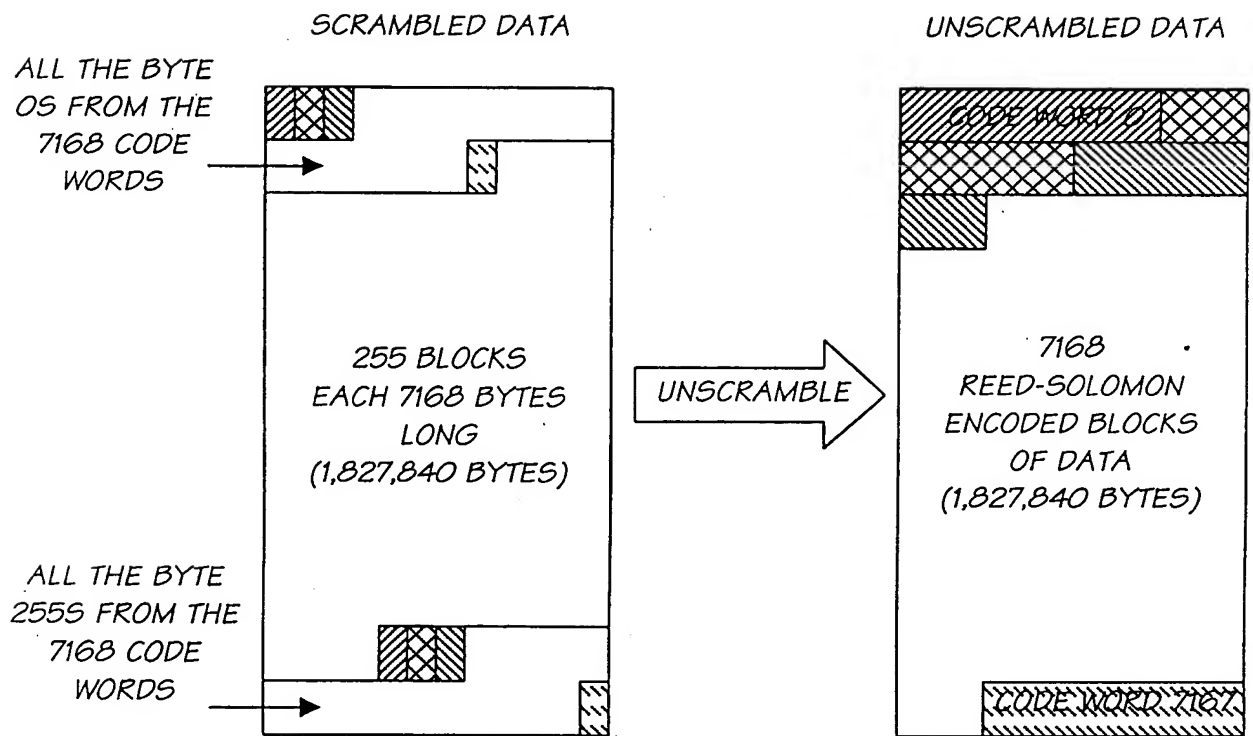


FIG. 80

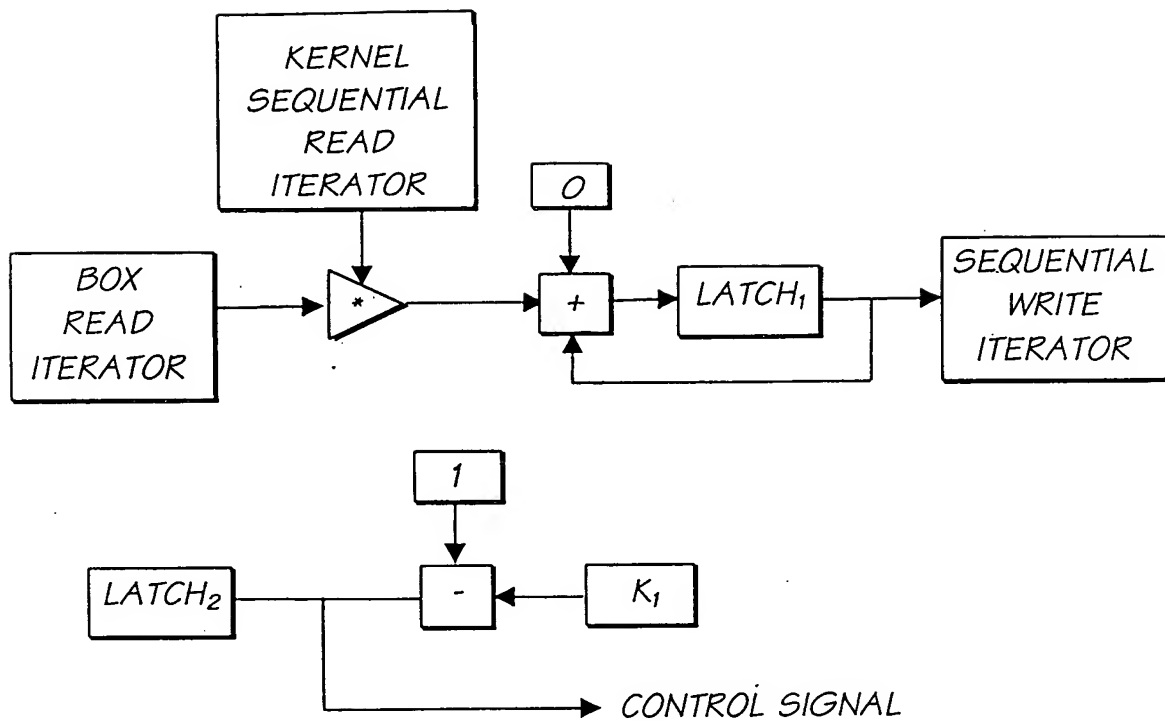


FIG. 81

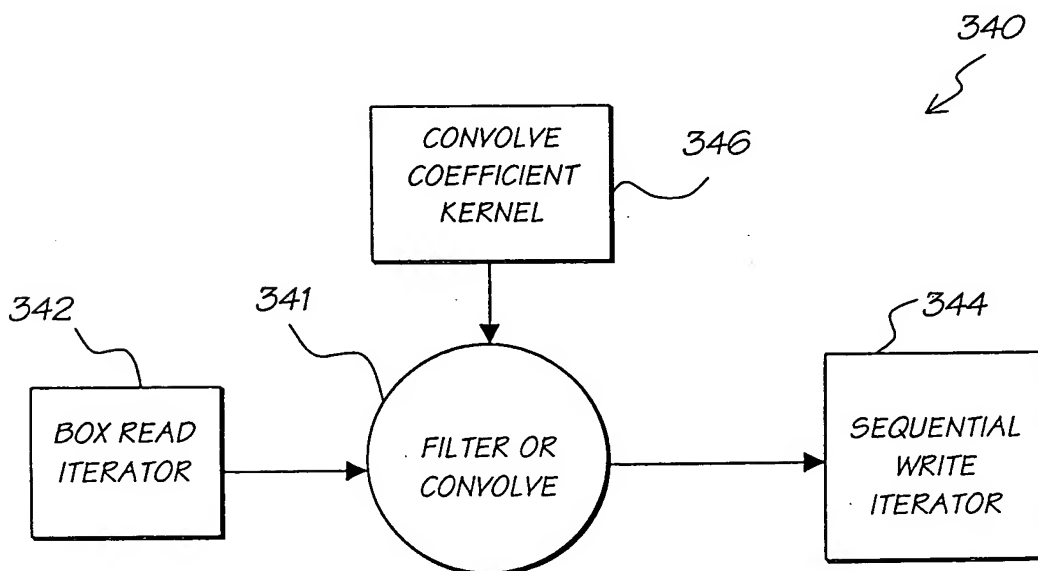


FIG. 82

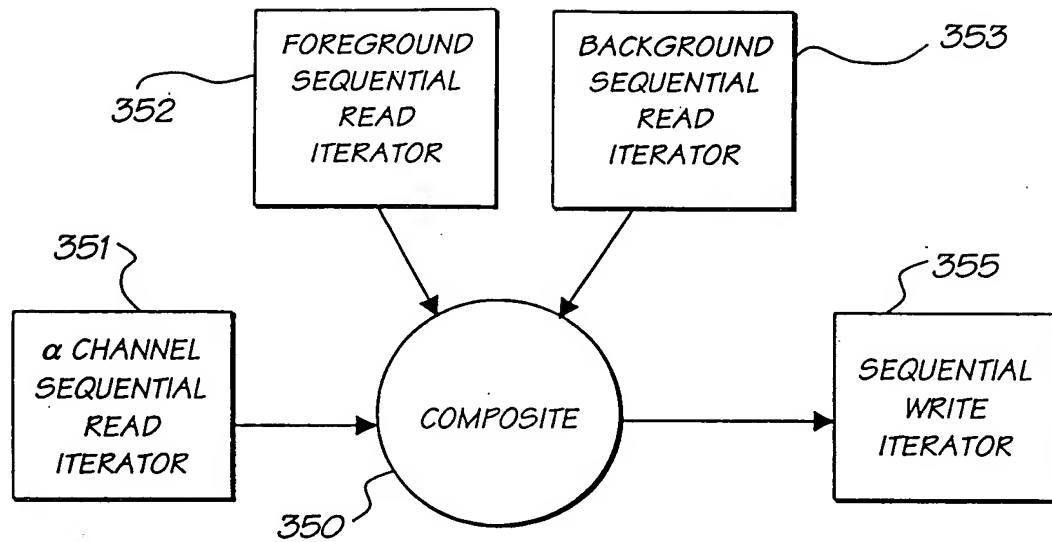


FIG. 83

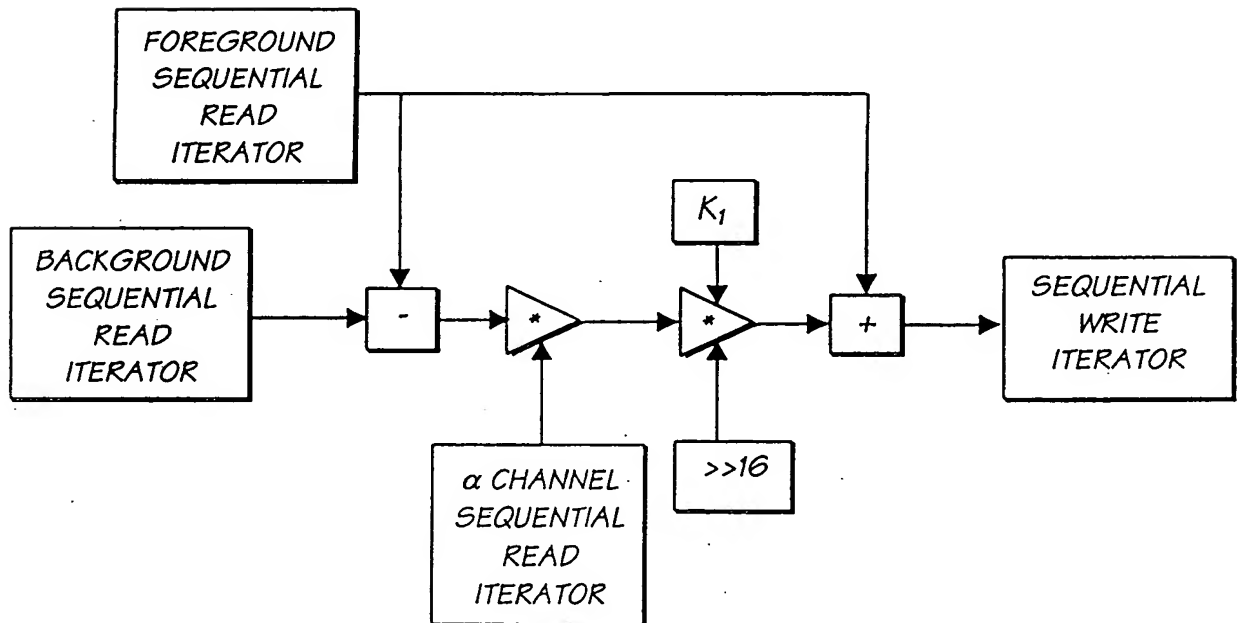


FIG. 84

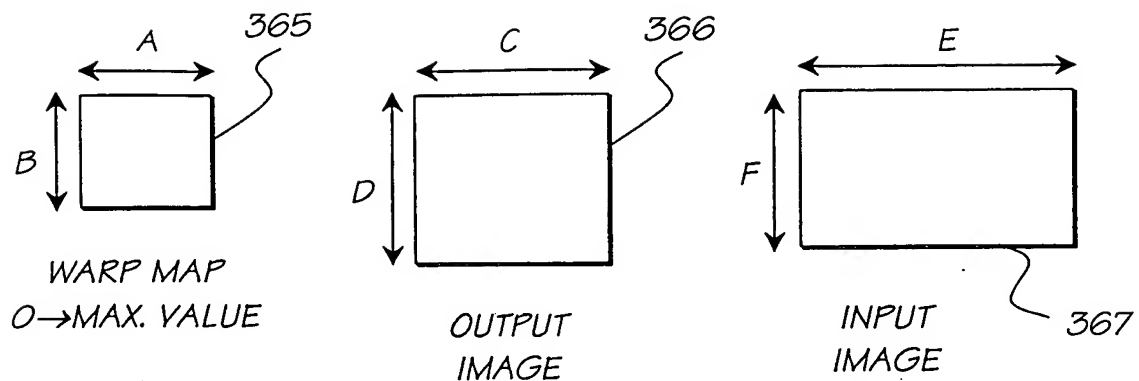


FIG. 85

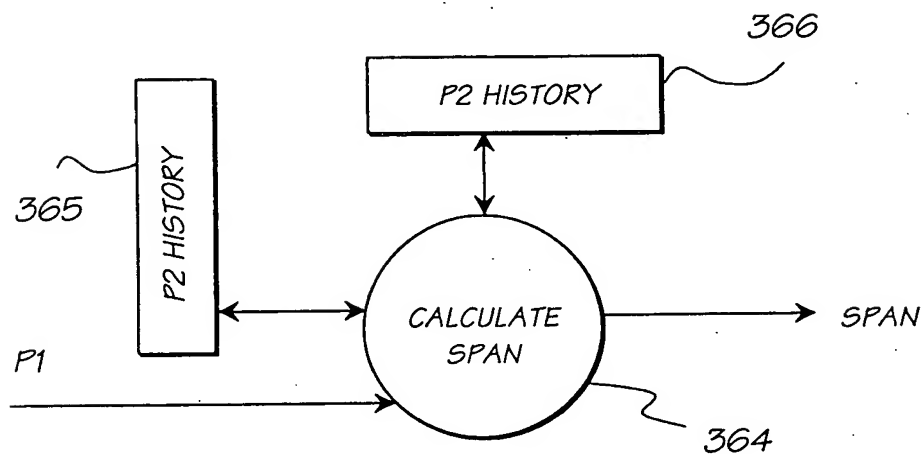


FIG. 86

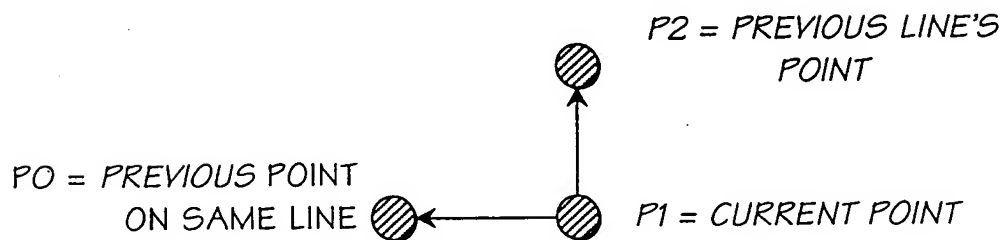


FIG. 88

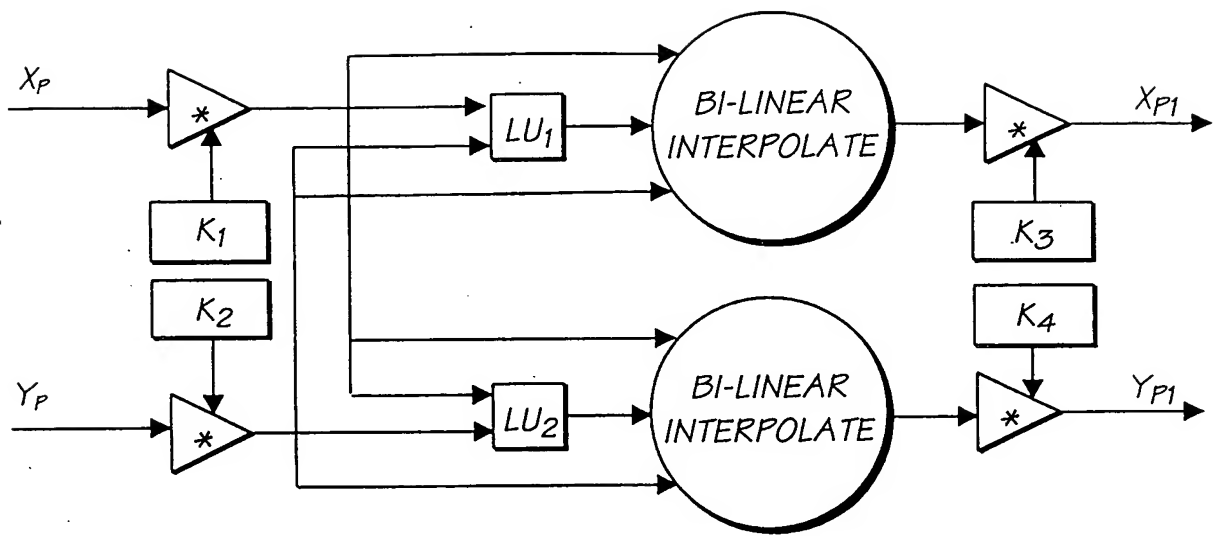


FIG. 87

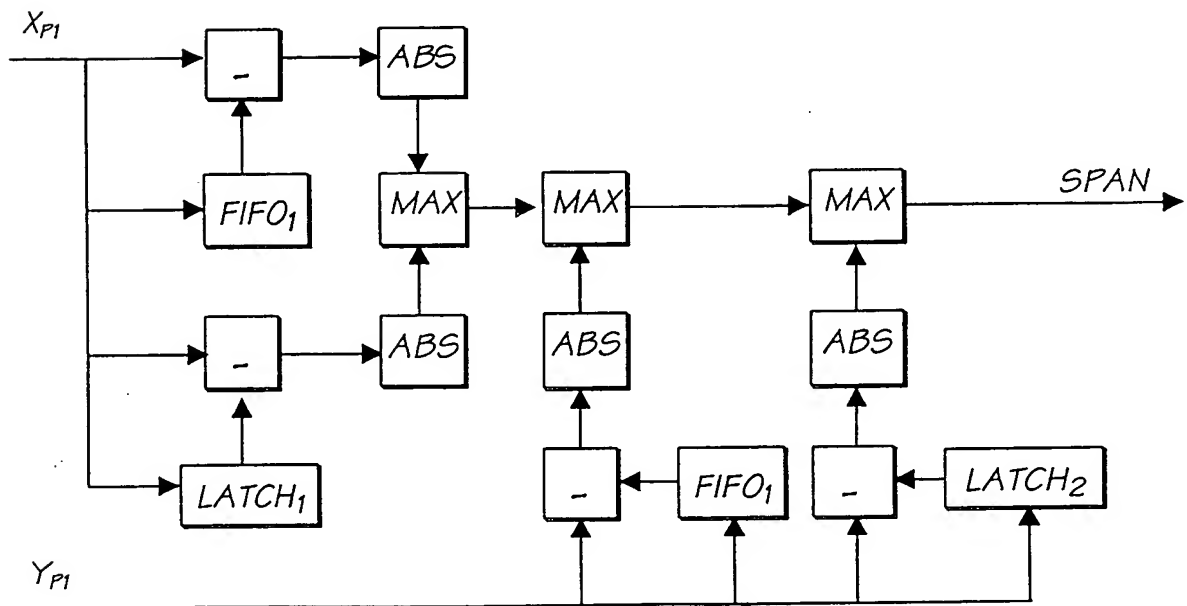


FIG. 89

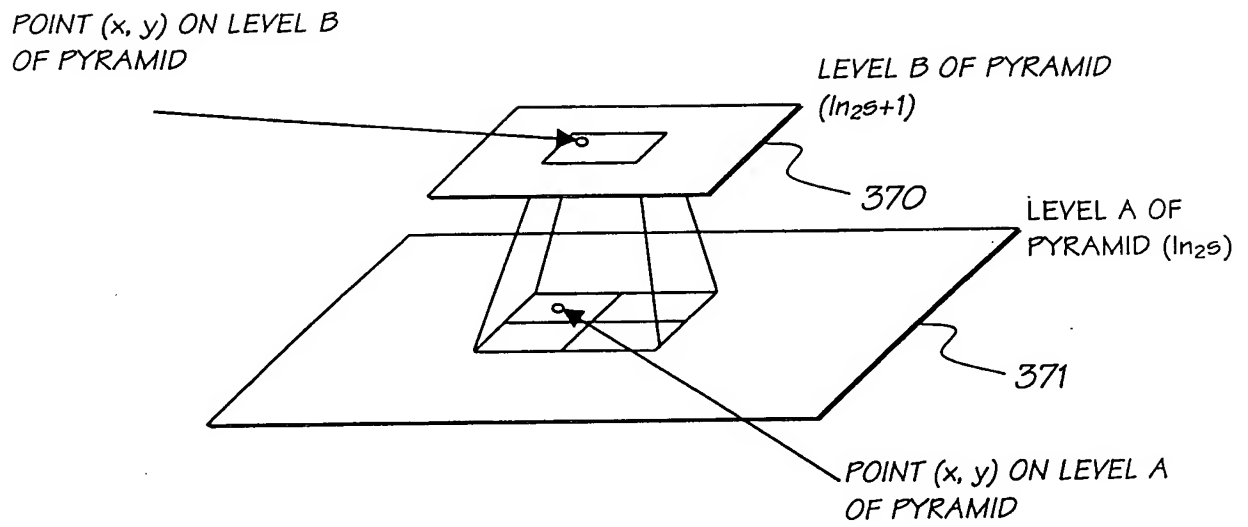


FIG. 90

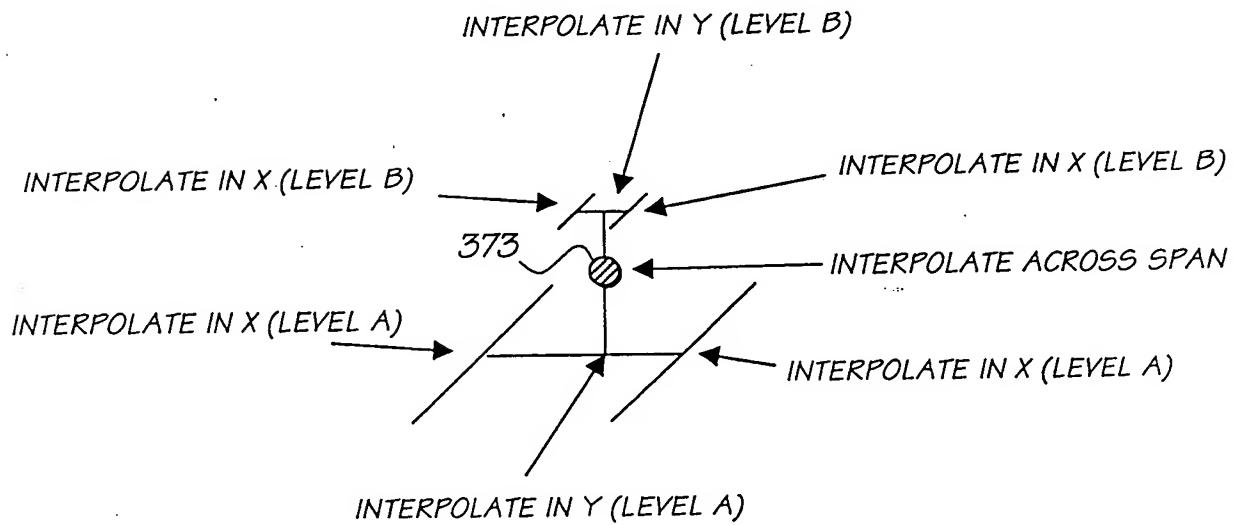


FIG. 91

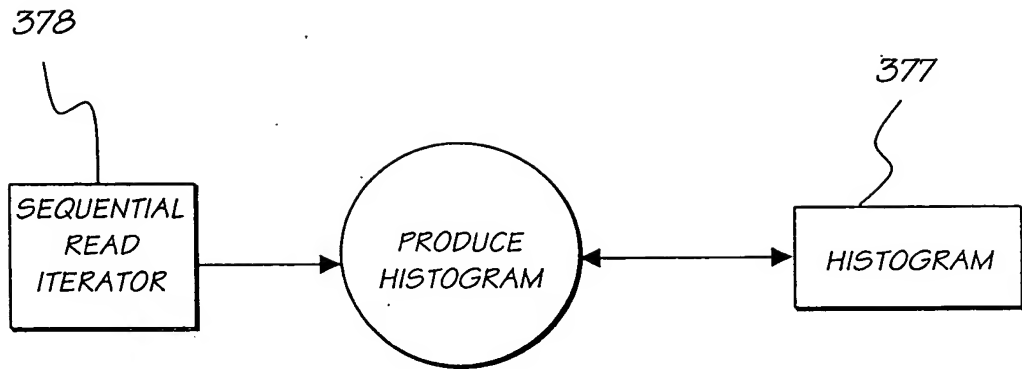


FIG. 92

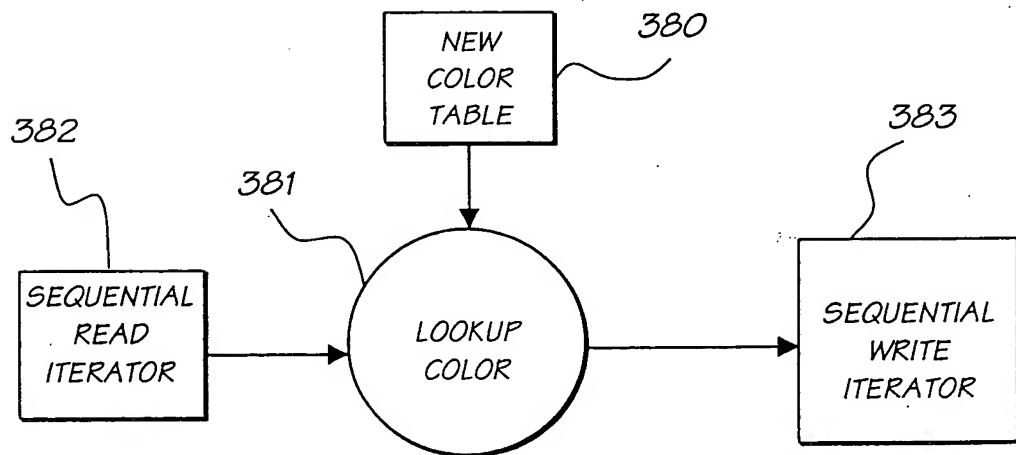


FIG. 93

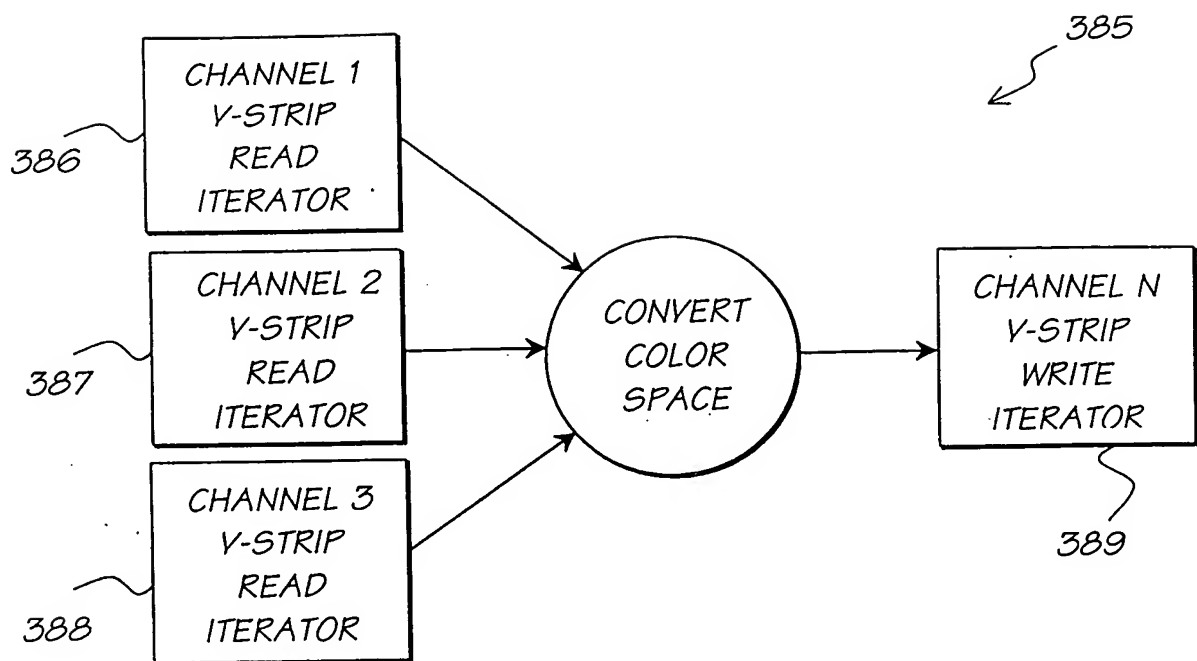


FIG. 94

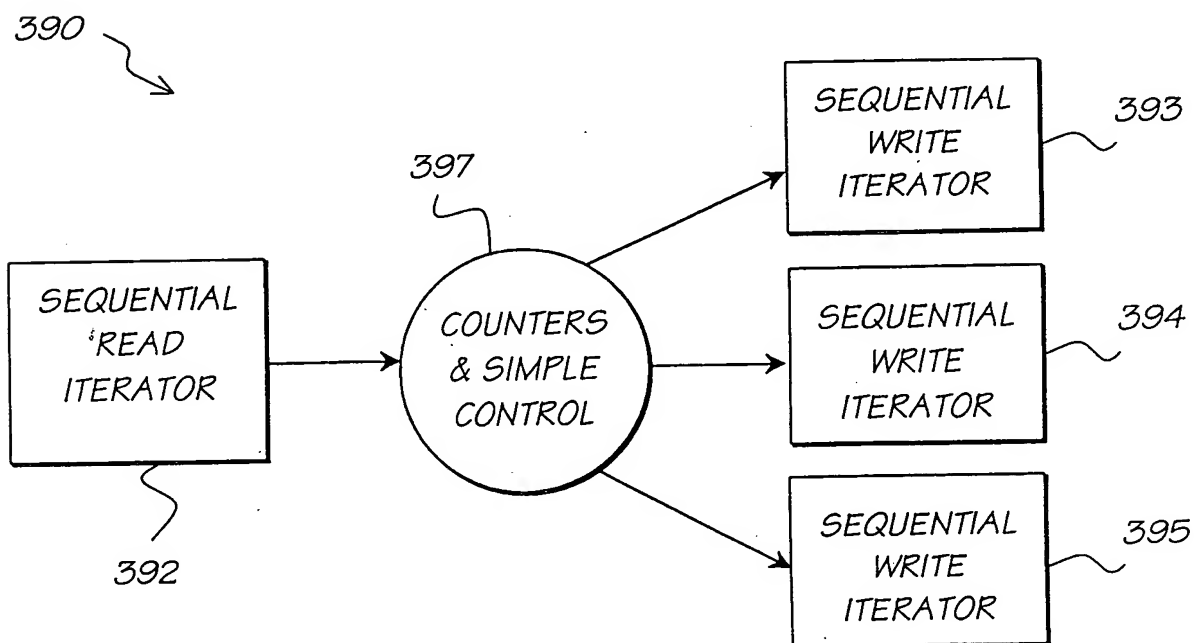


FIG. 101

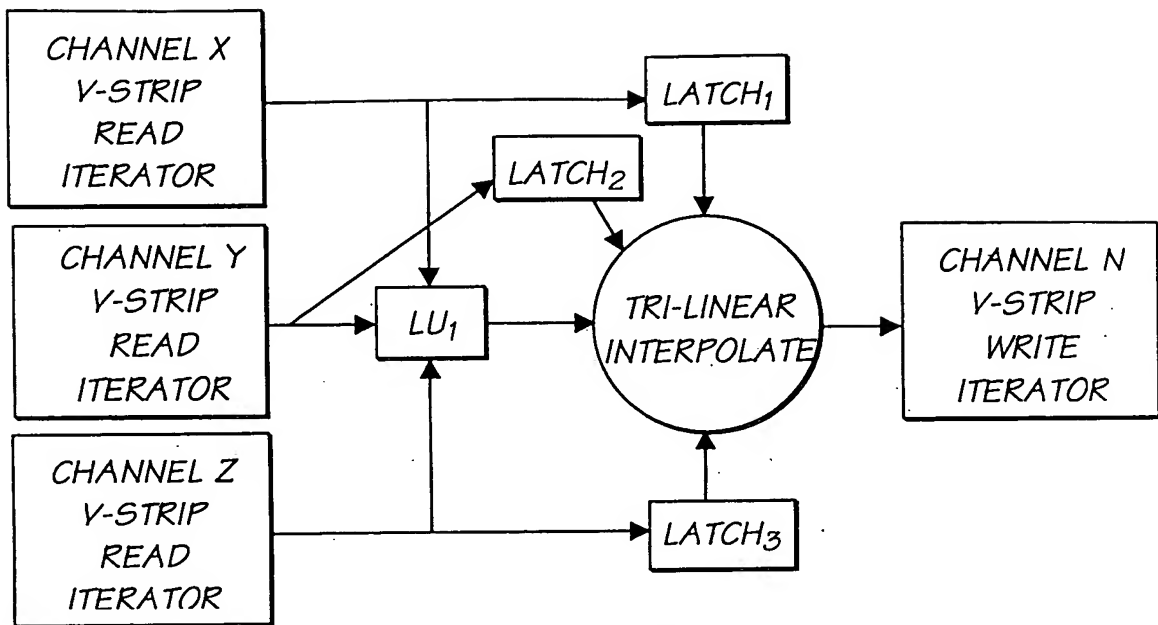


FIG. 95

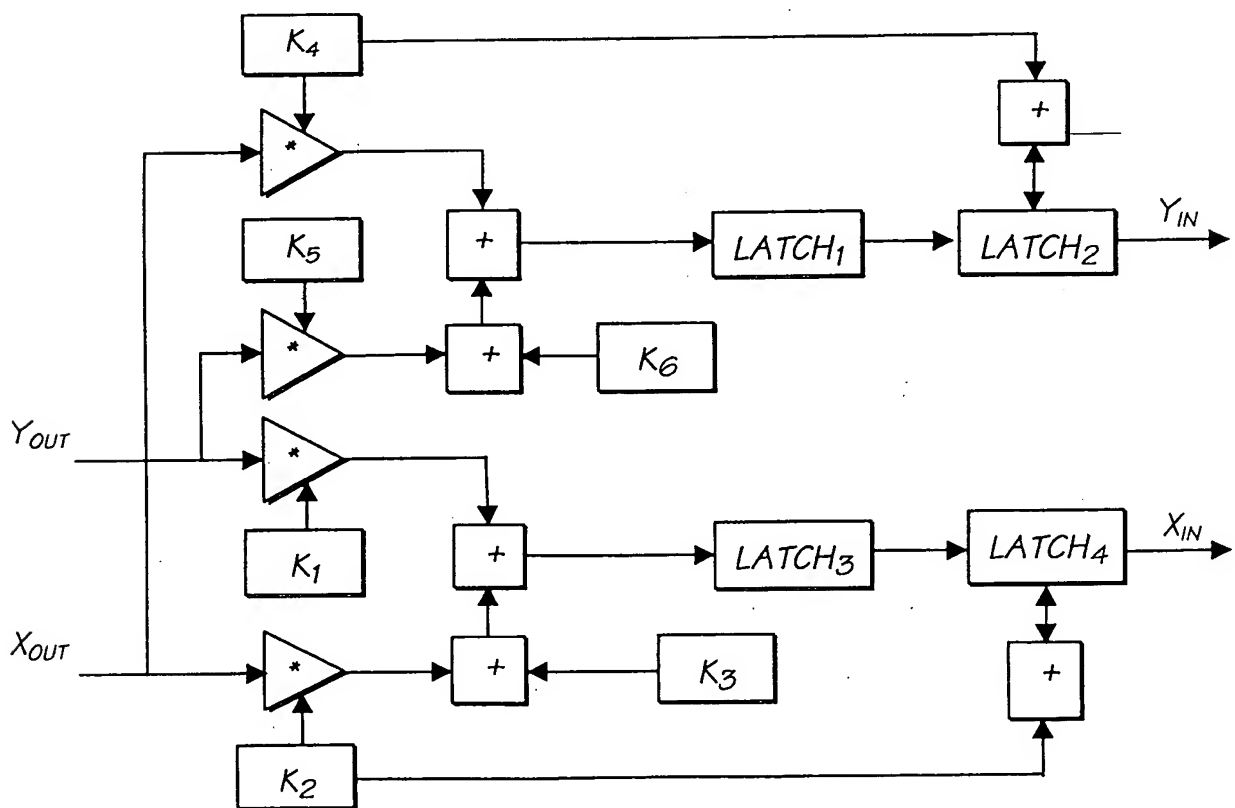


FIG. 96

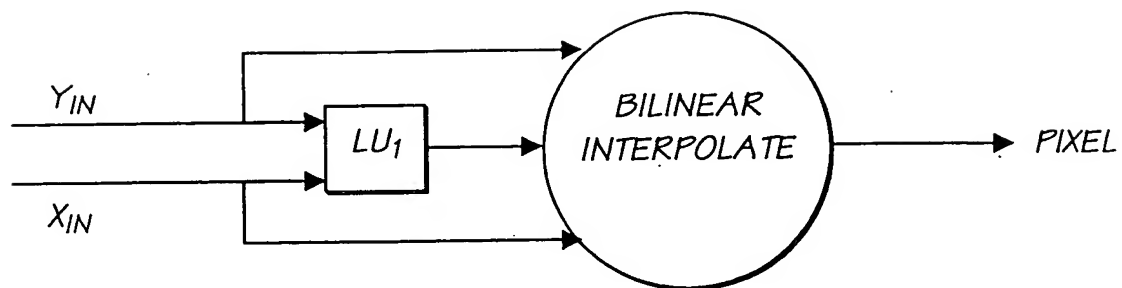


FIG. 97

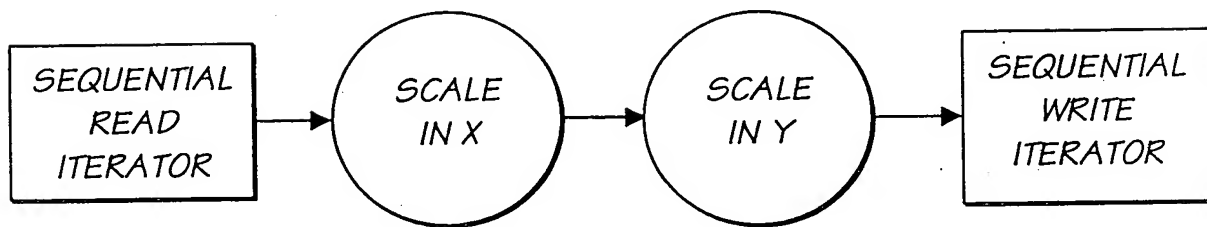


FIG. 98

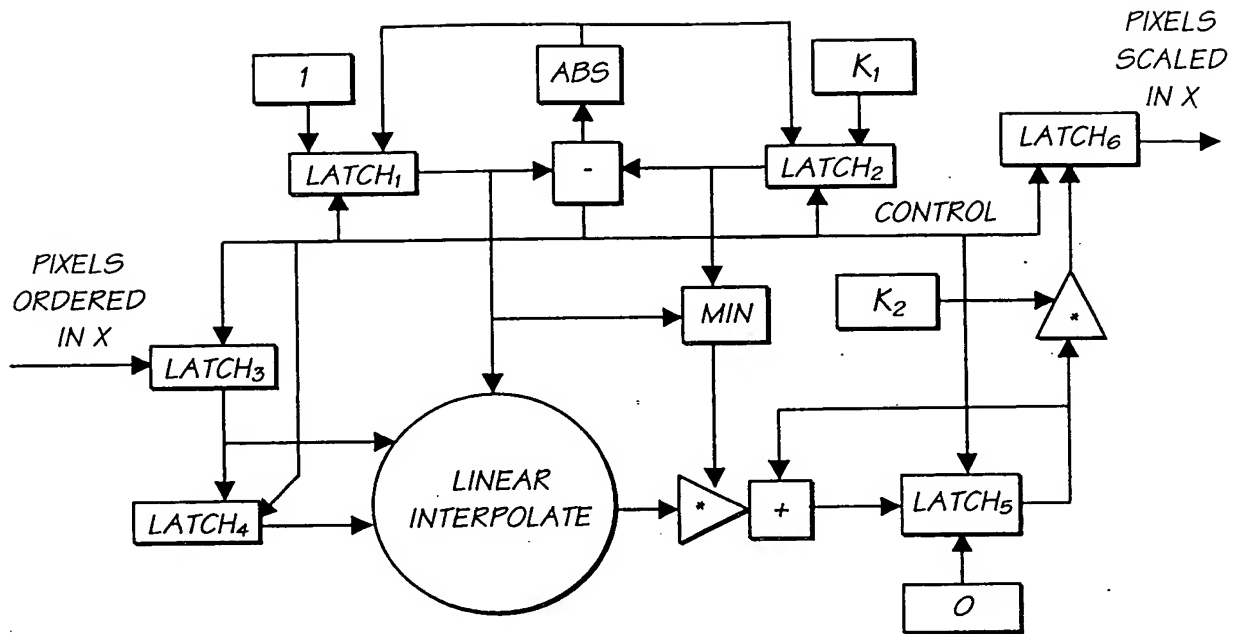


FIG. 99

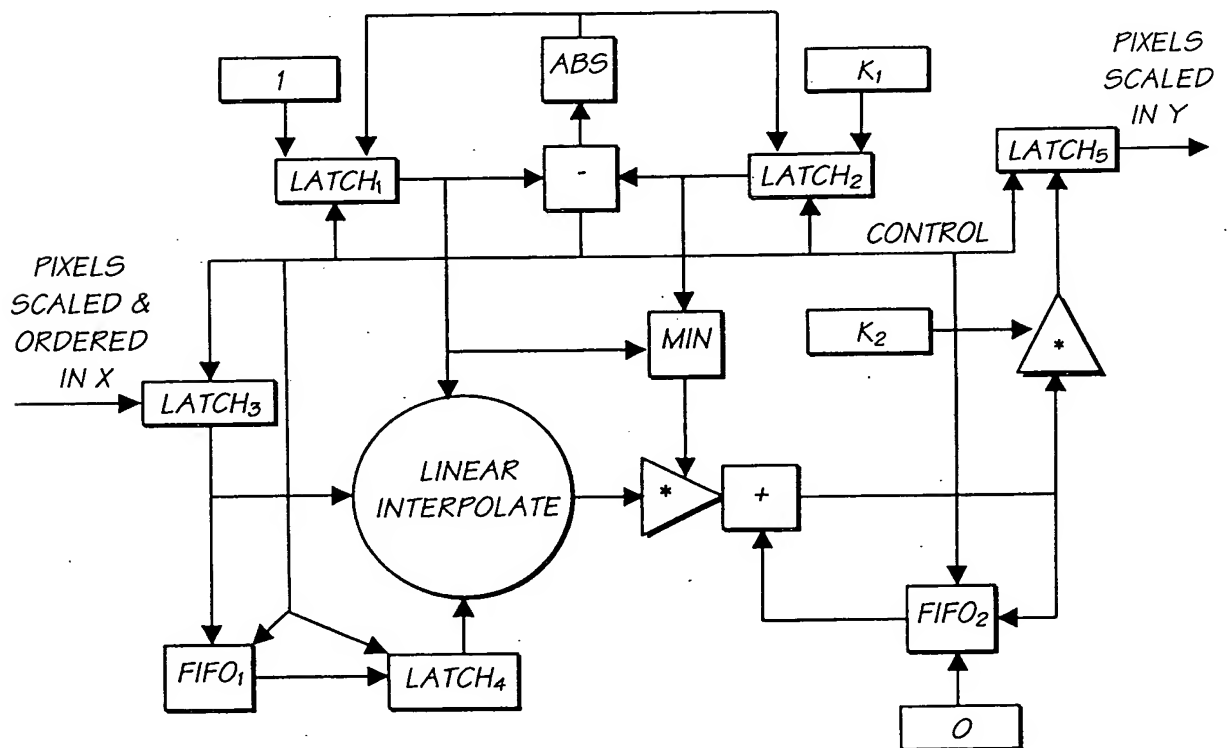


FIG. 100

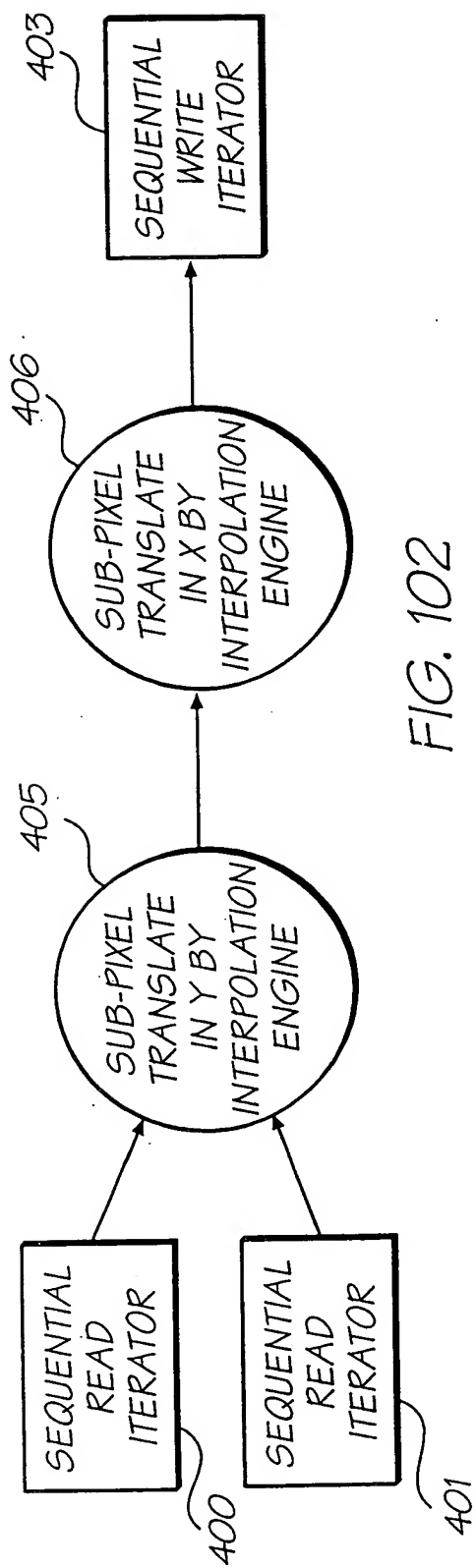


FIG. 102

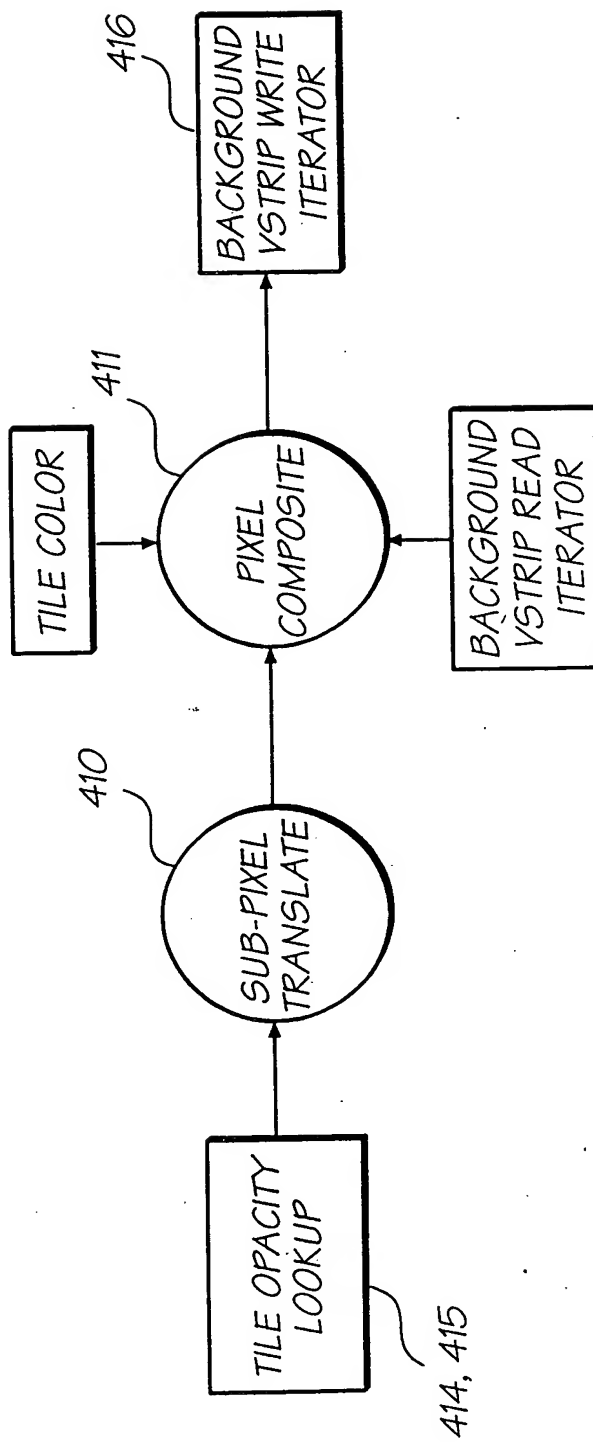


FIG. 103

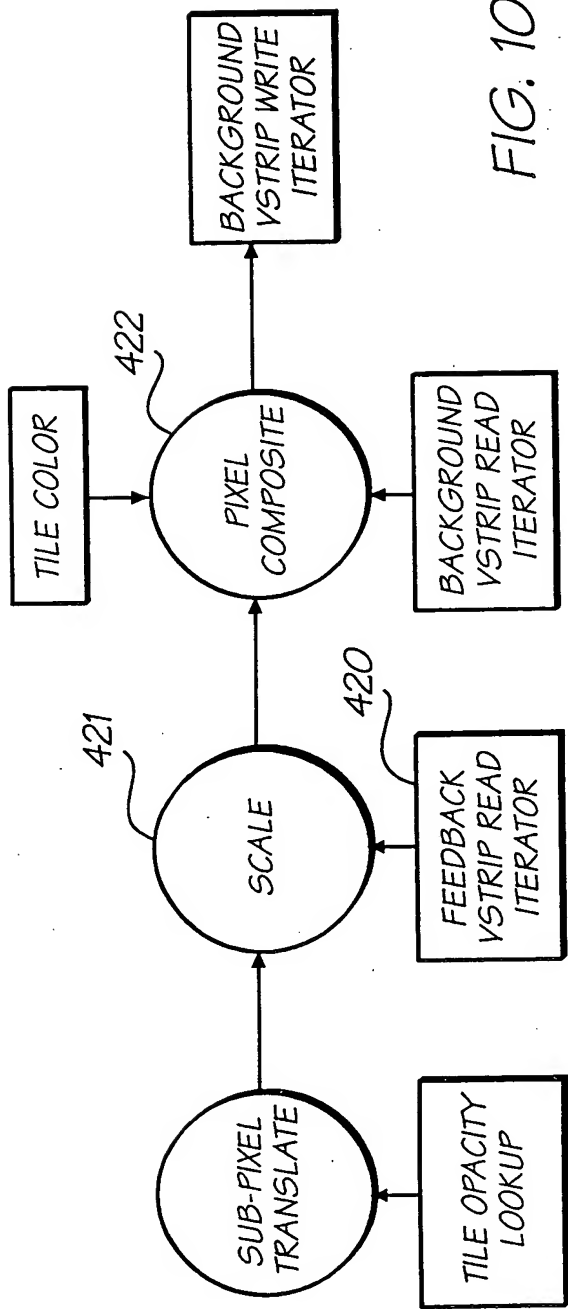


FIG. 104

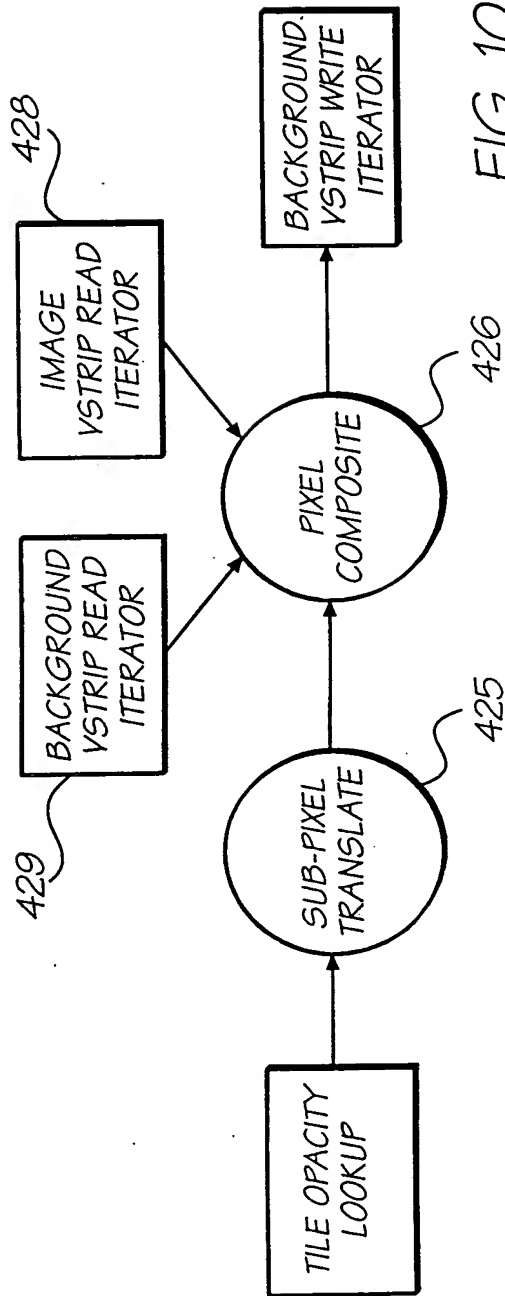


FIG. 105

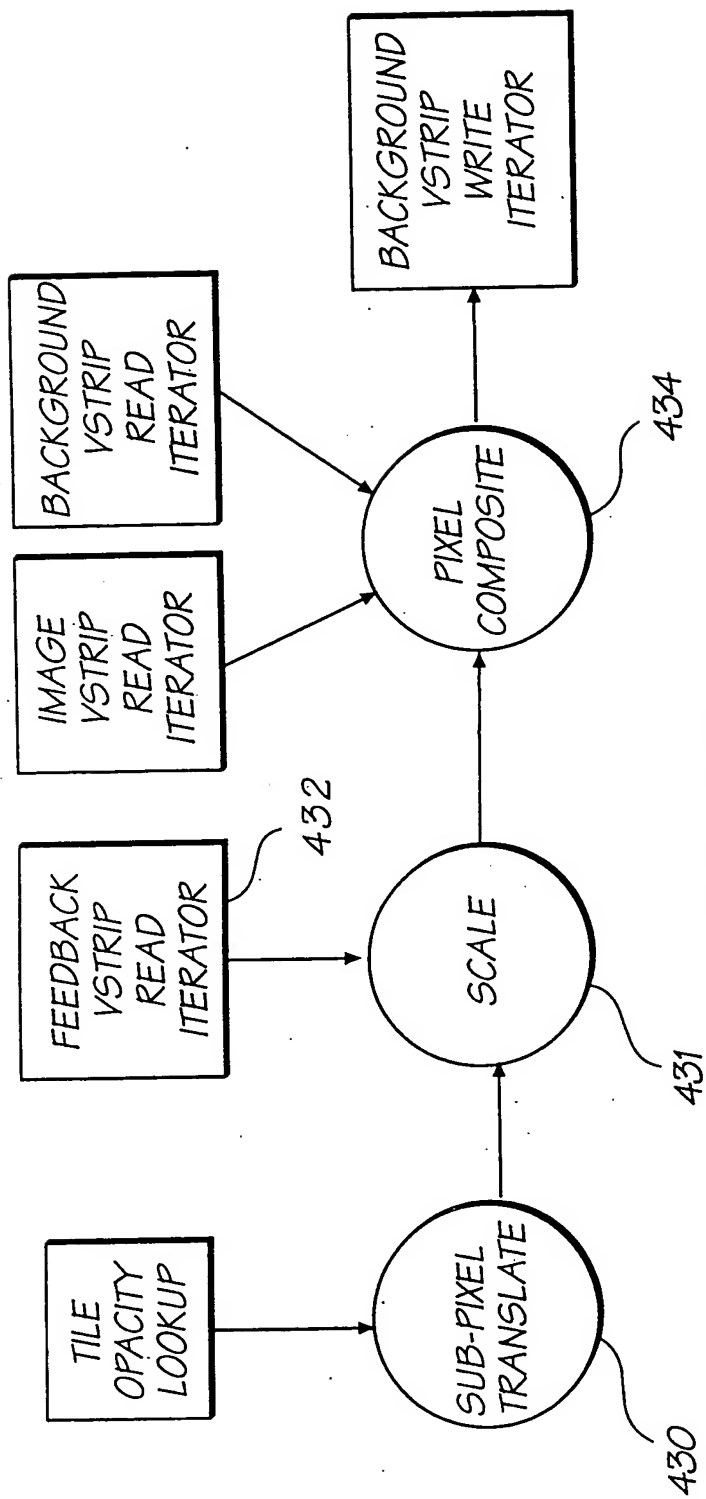


FIG. 106

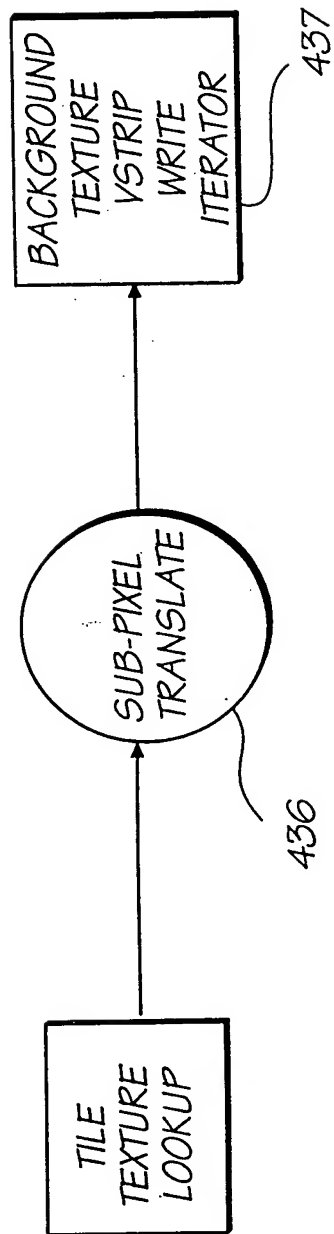


FIG. 107

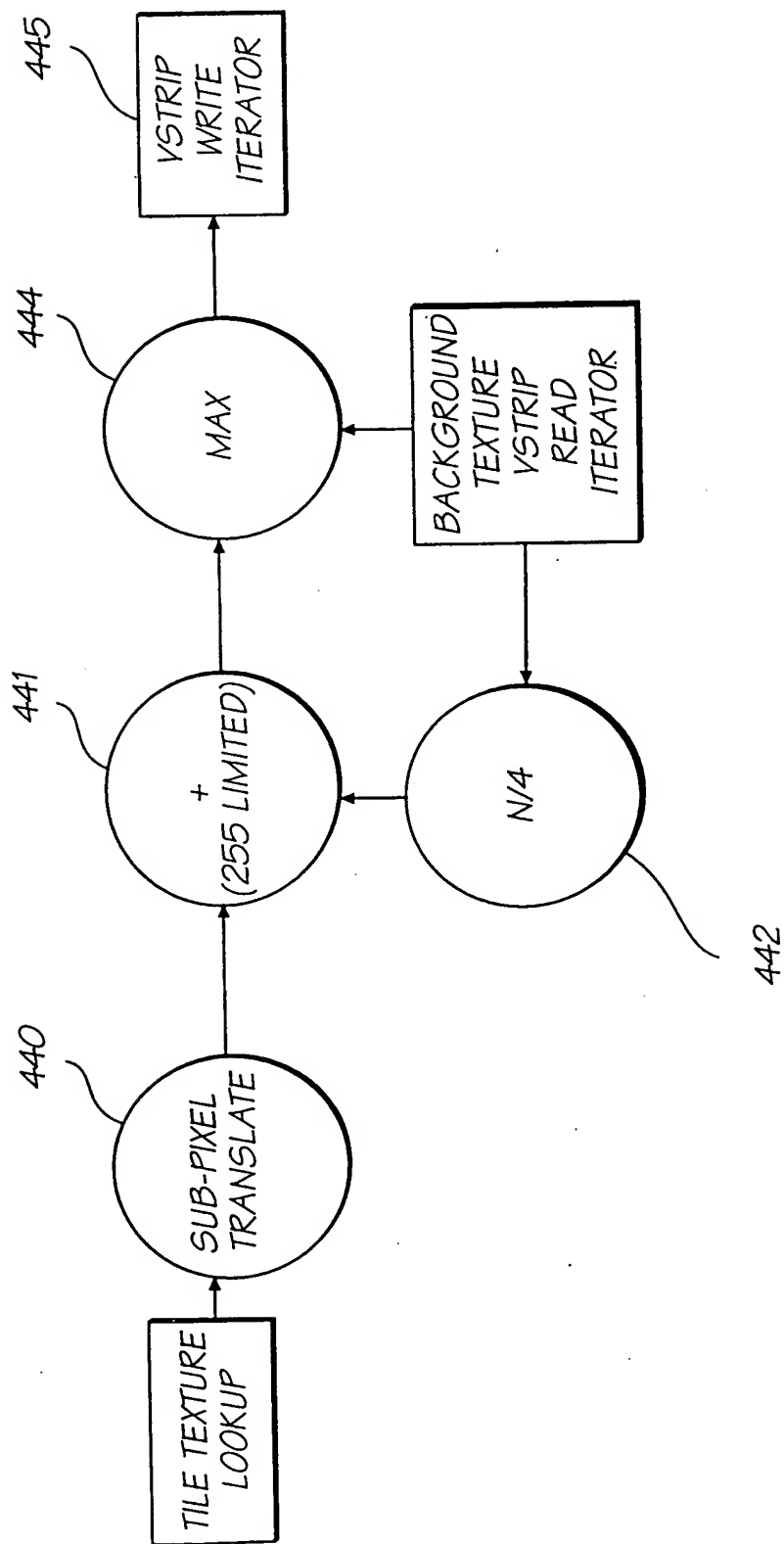


FIG. 108

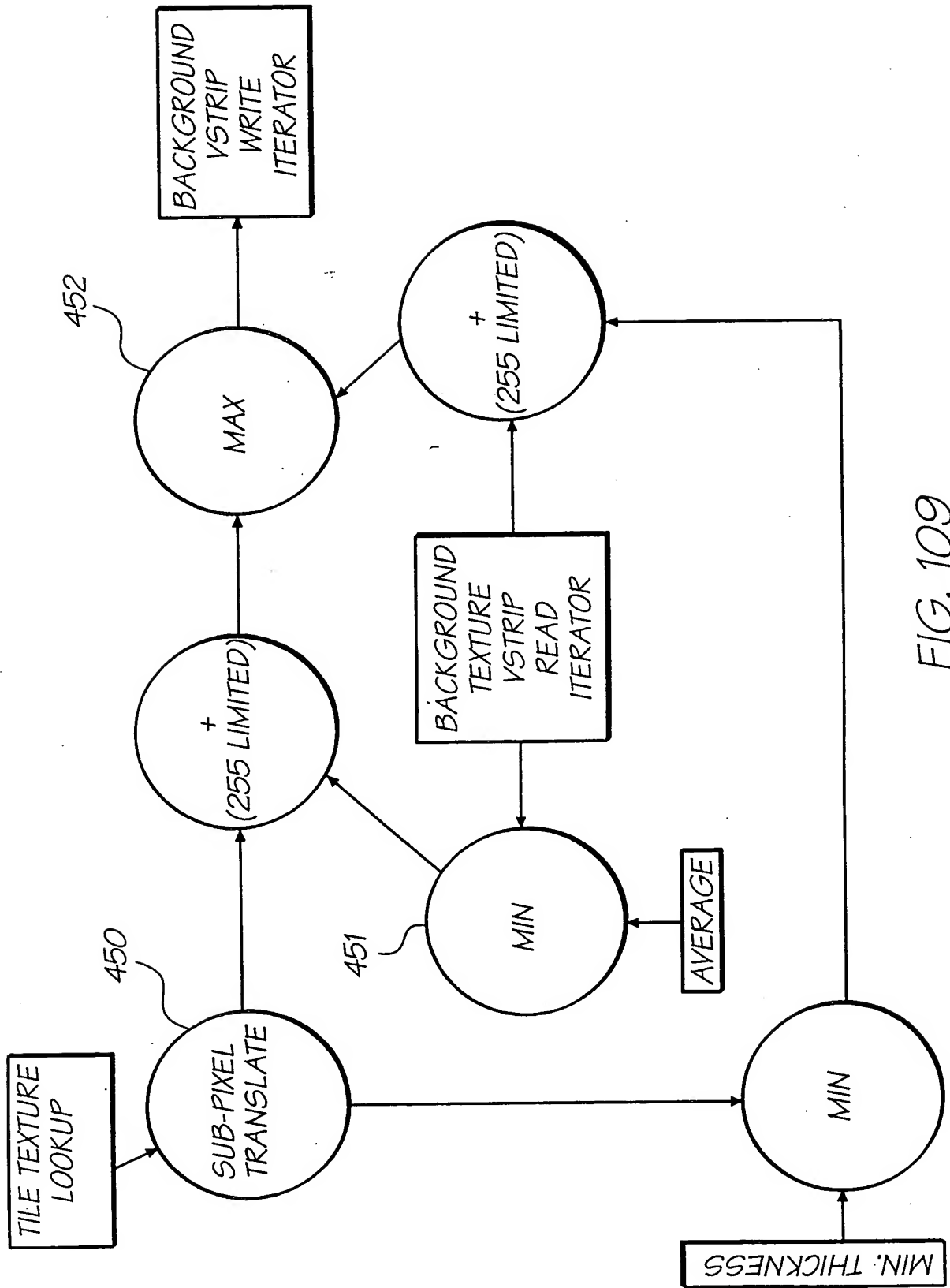


FIG. 109

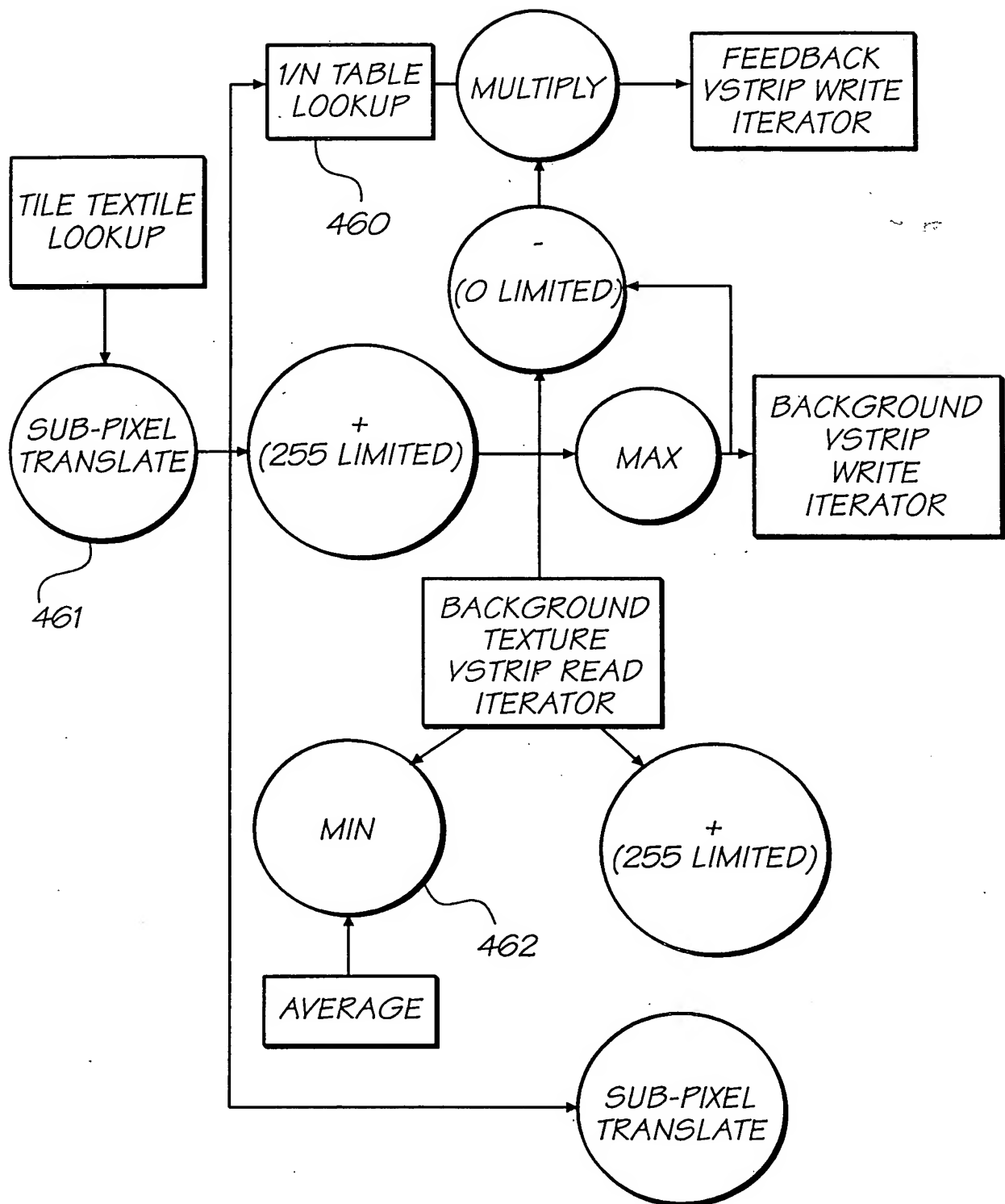


FIG. 110

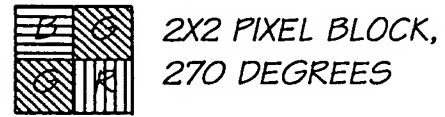
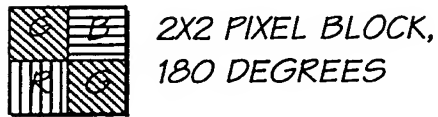
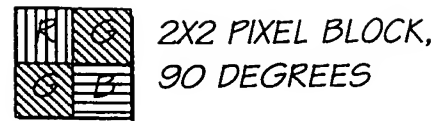
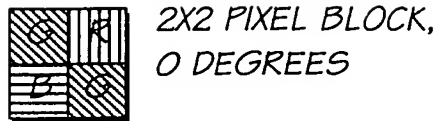


FIG. 111

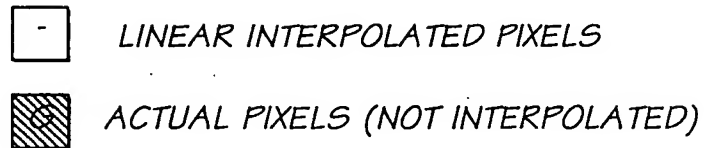
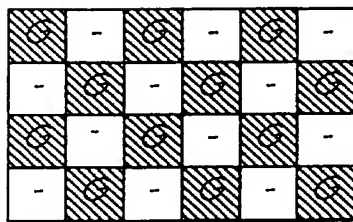


FIG. 112

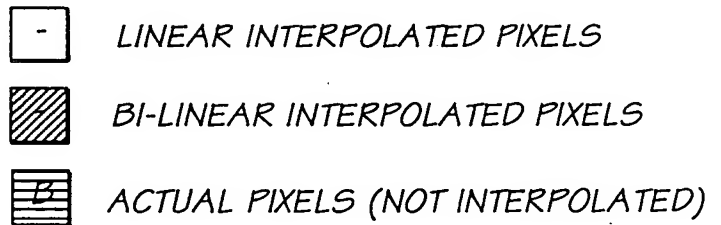
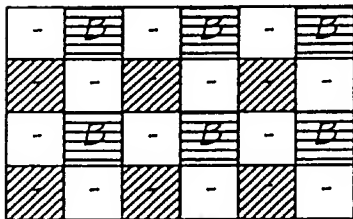


FIG. 113

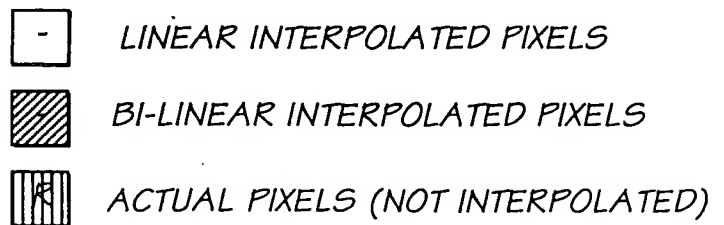
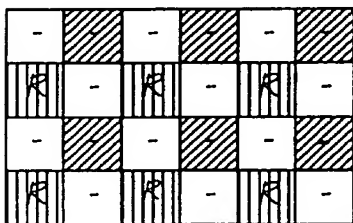


FIG. 114

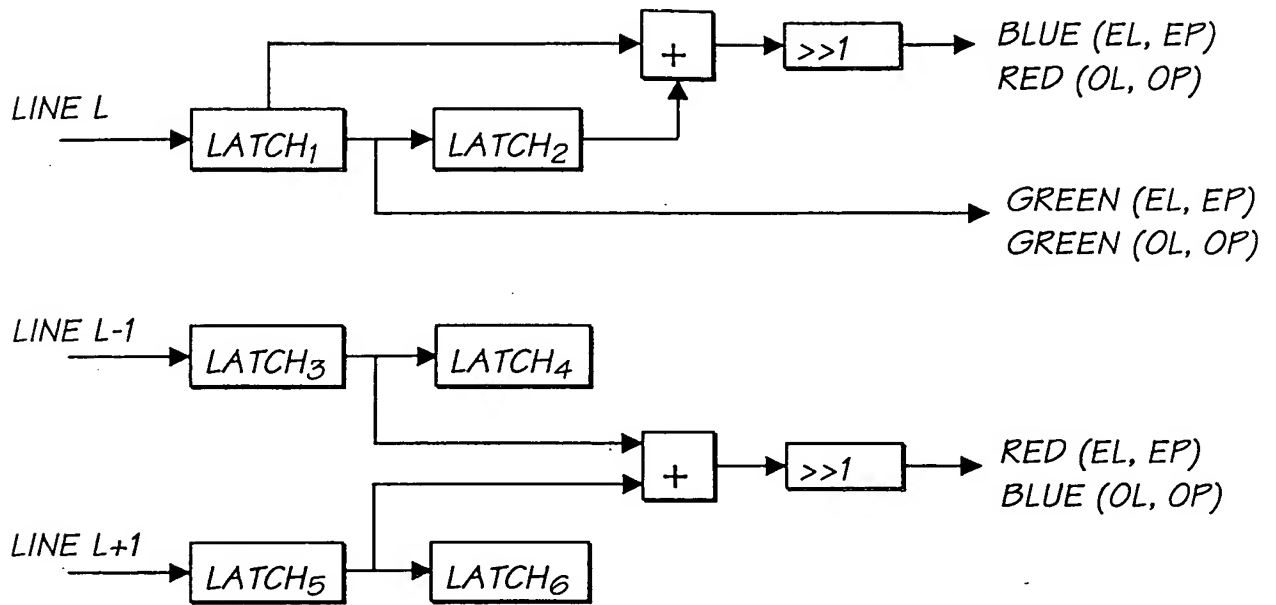


FIG. 115

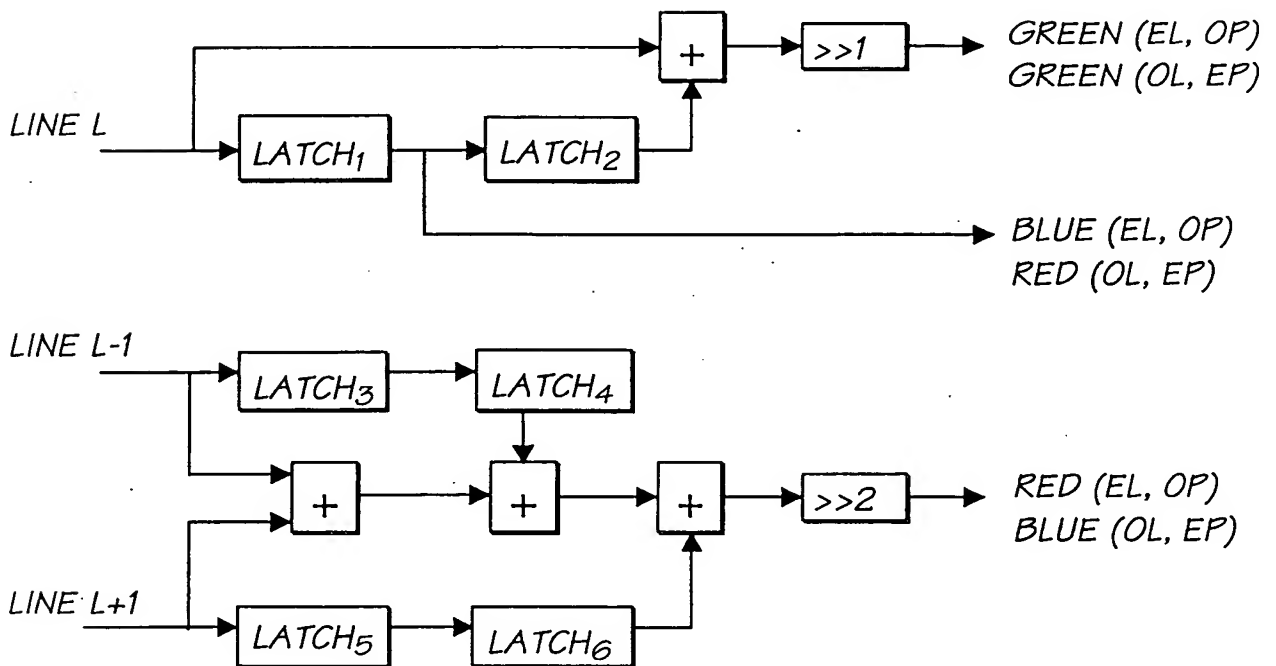


FIG. 116

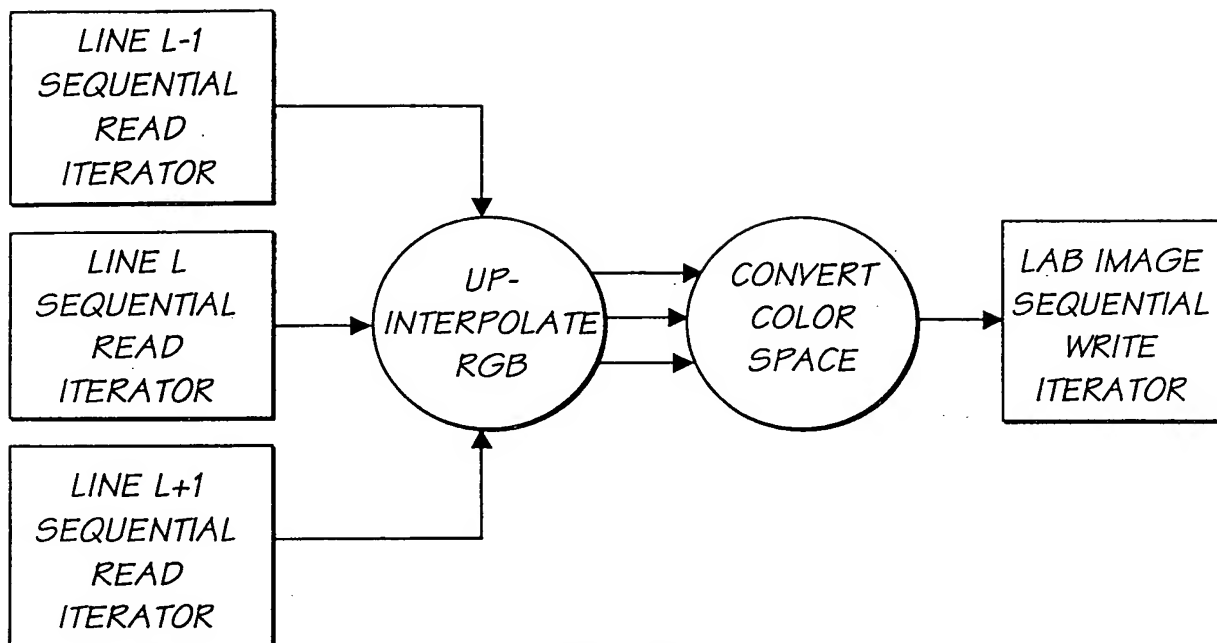


FIG. 117

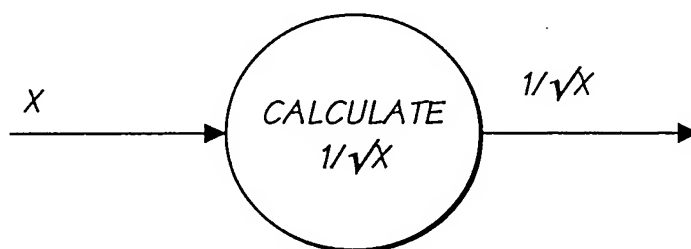


FIG. 118

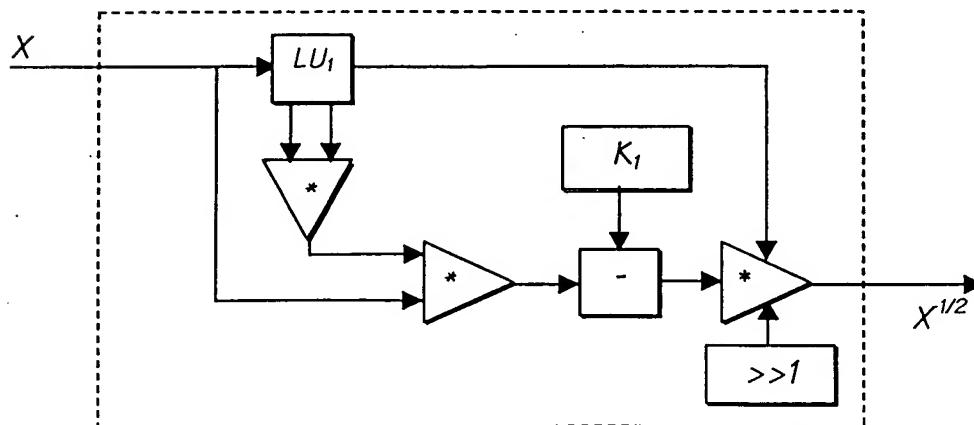


FIG. 119

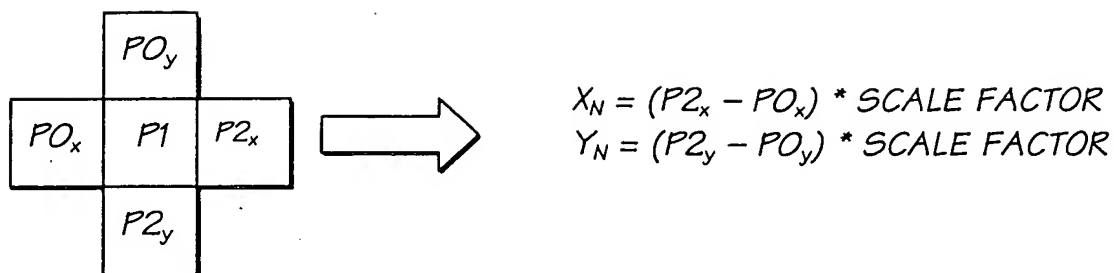


FIG. 120

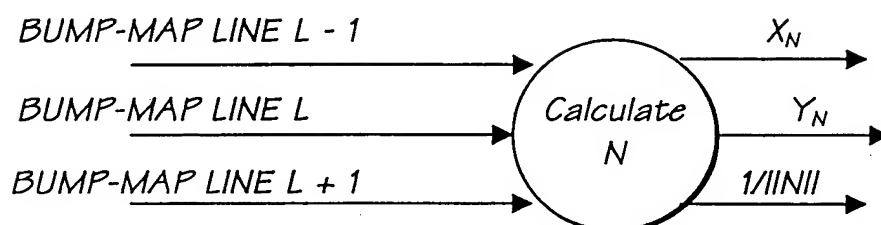


FIG. 121

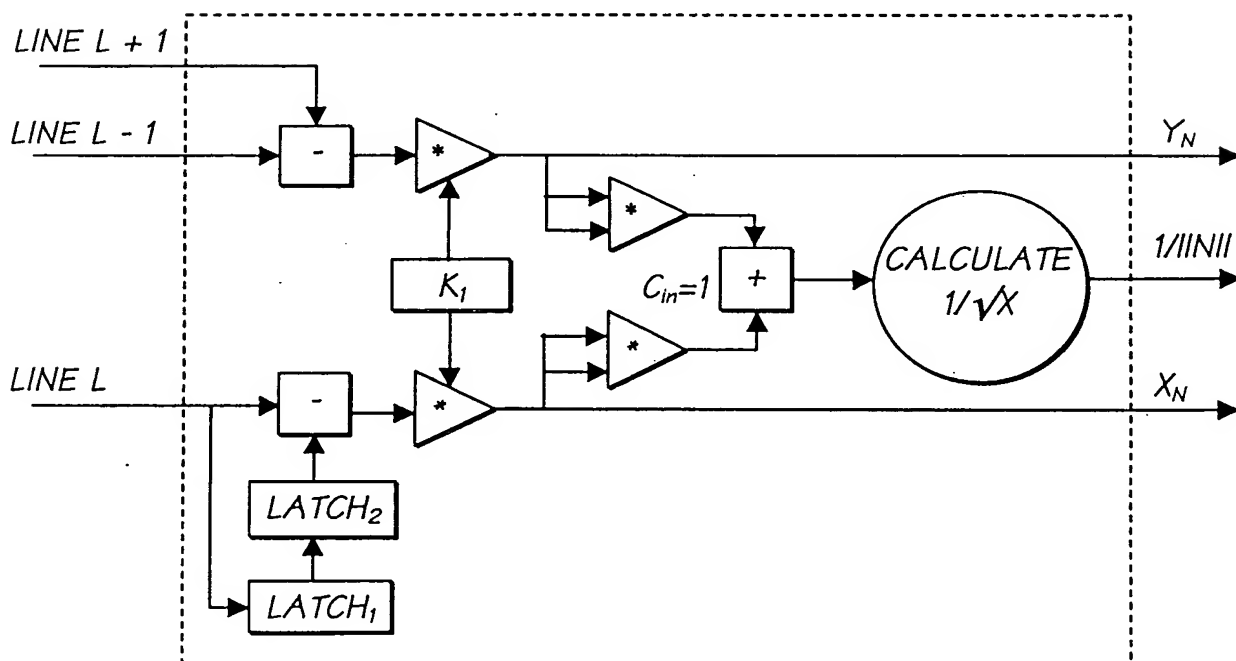


FIG. 122

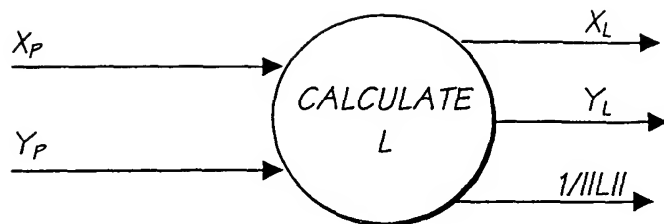


FIG. 123

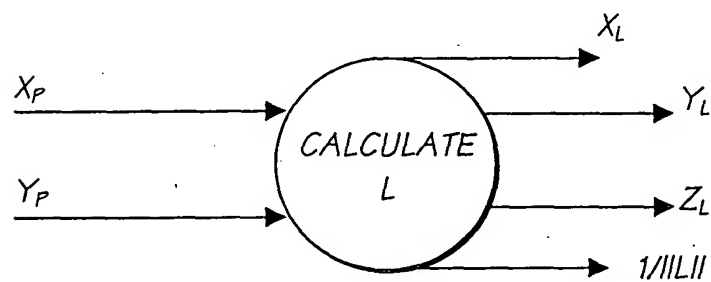


FIG. 124

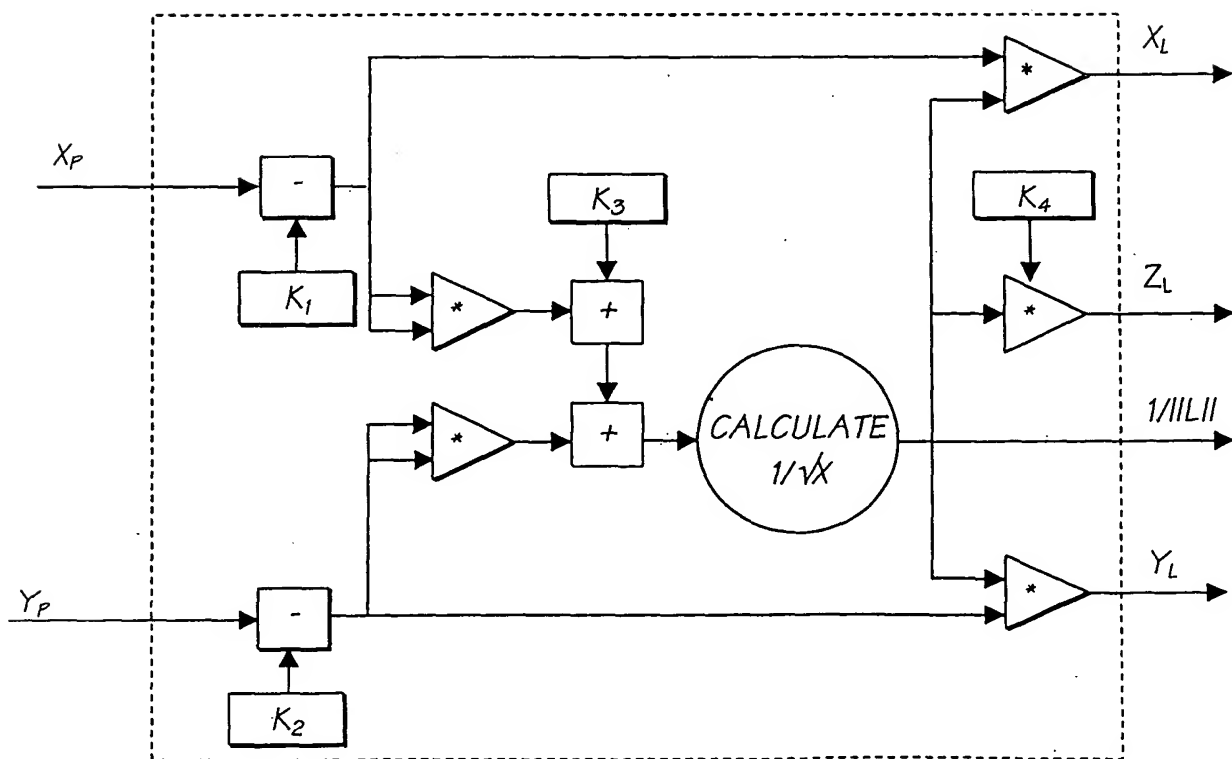


FIG. 125

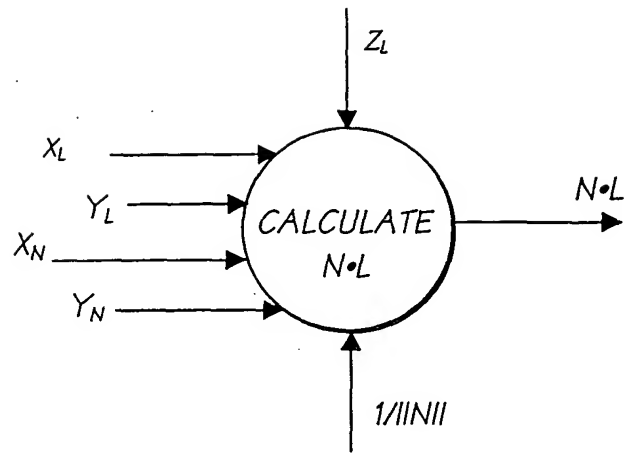


FIG. 126

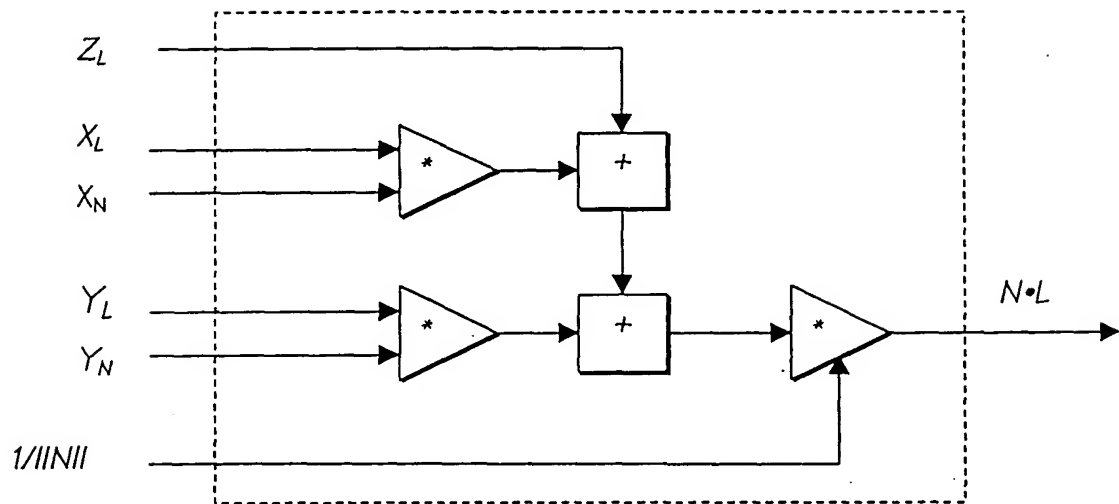


FIG. 127

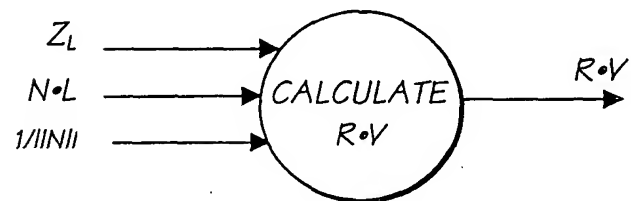


FIG. 128

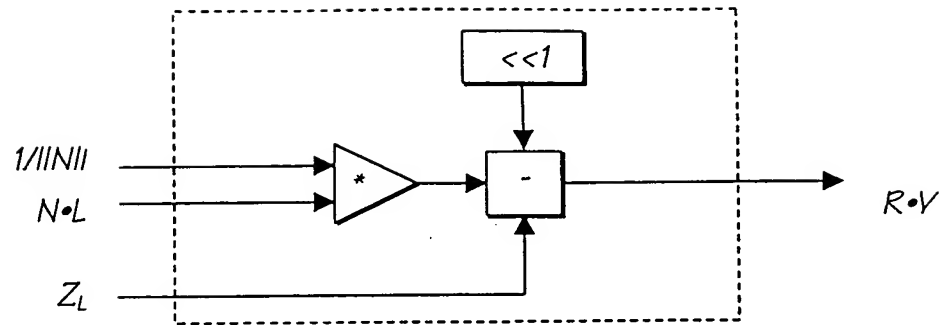


FIG. 129

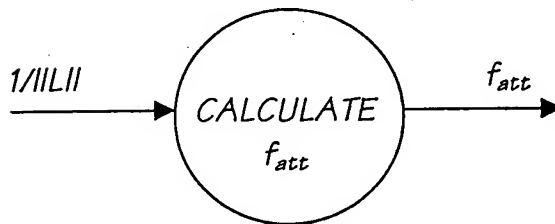


FIG. 130

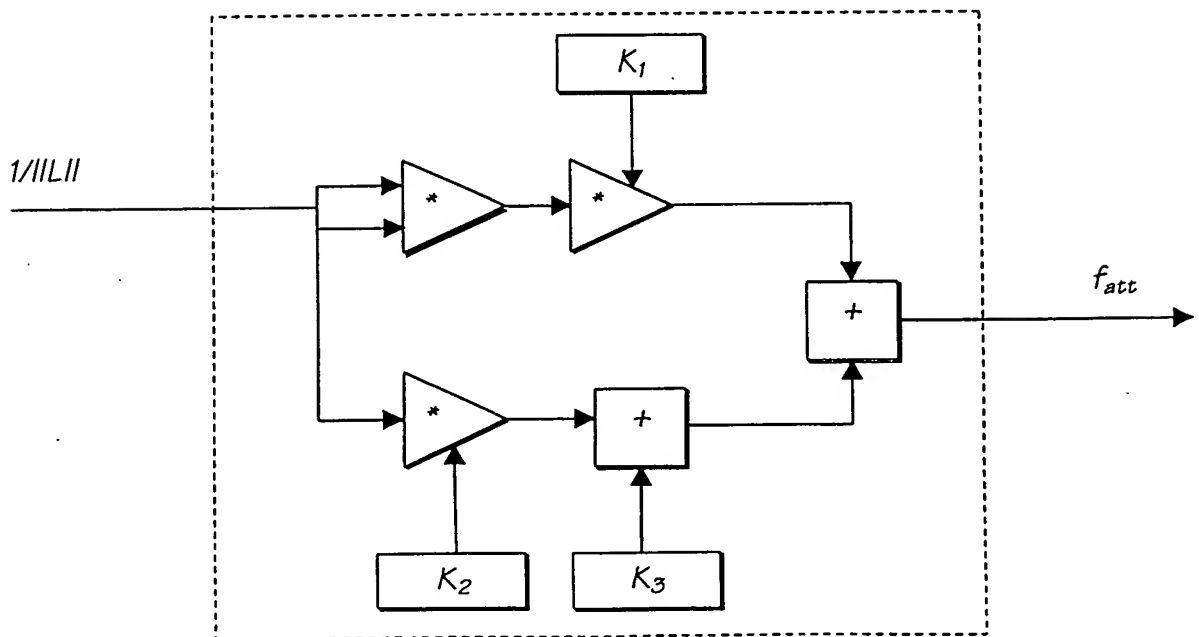


FIG. 131

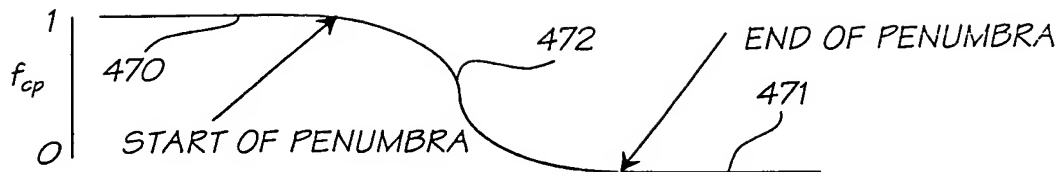


FIG. 132

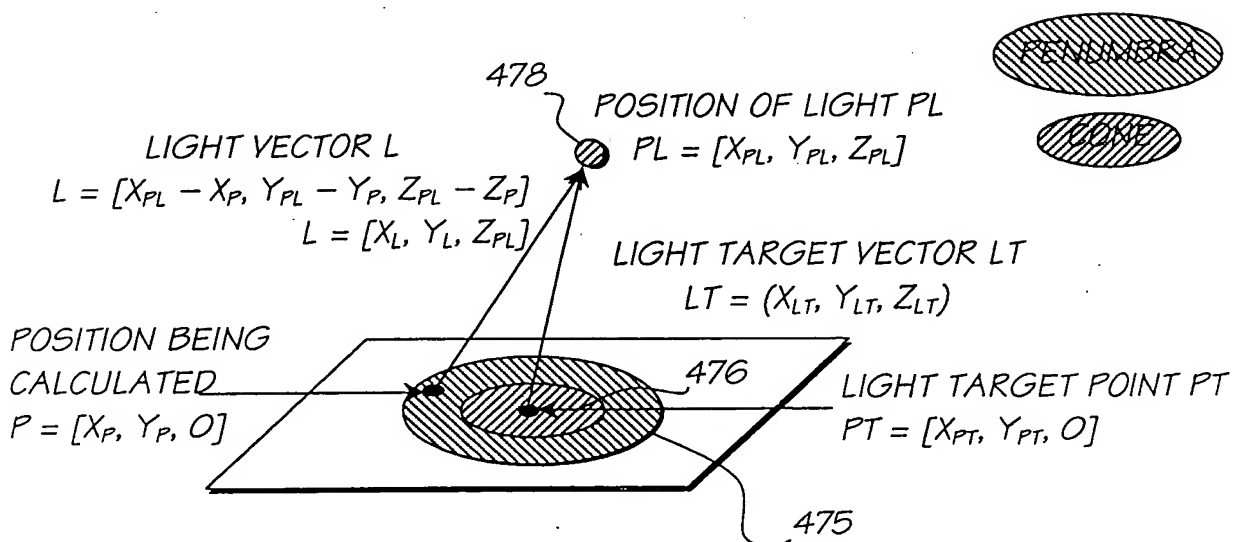


FIG. 133

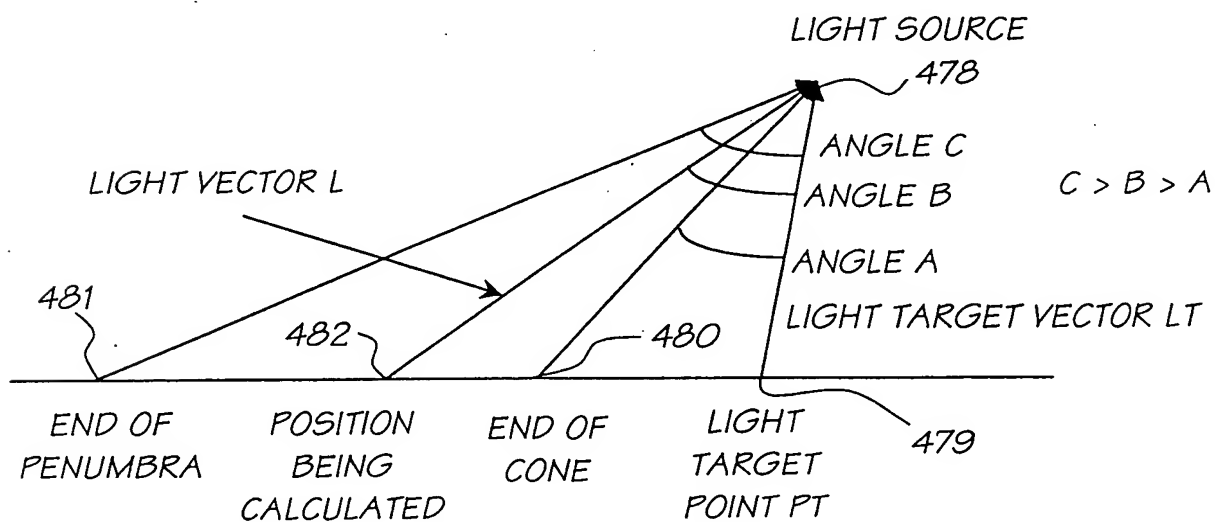


FIG. 134

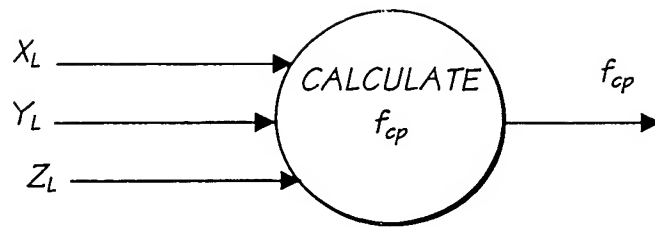


FIG. 135

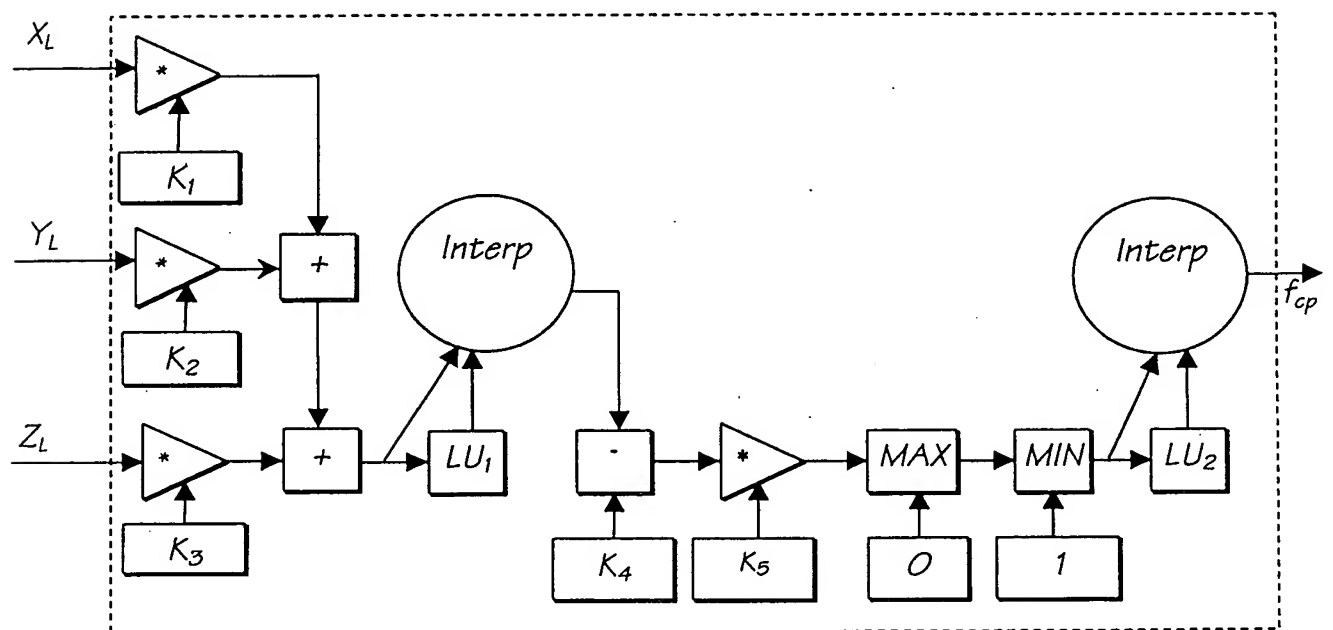


FIG. 136

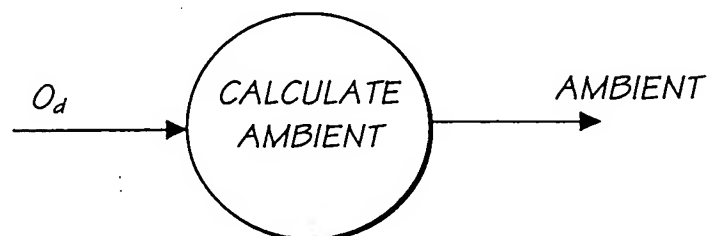


FIG. 137

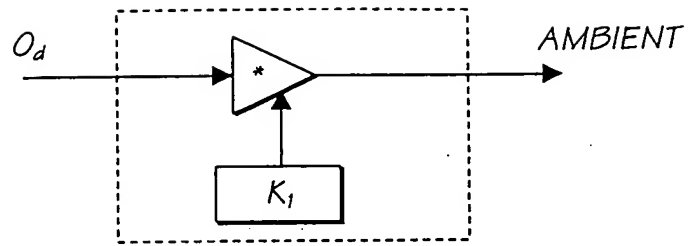


FIG. 138

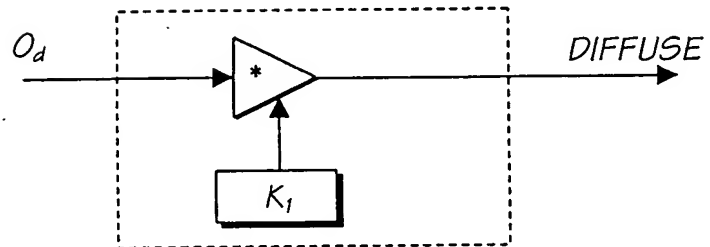


FIG. 139

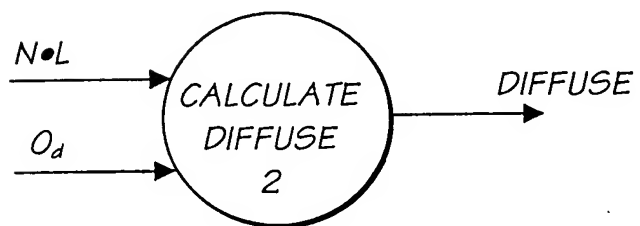


FIG. 140

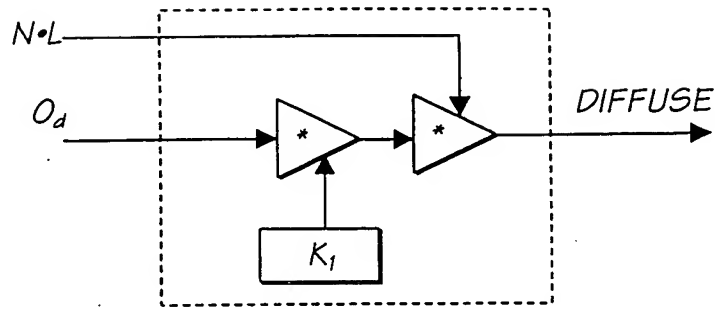


FIG. 141

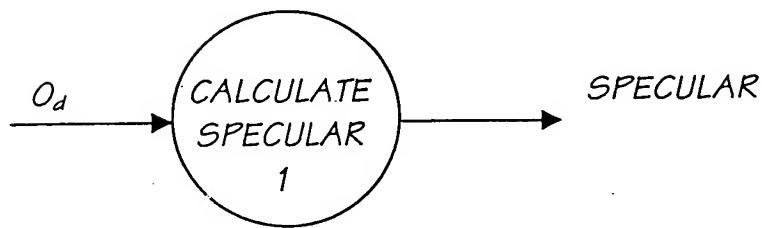


FIG. 142

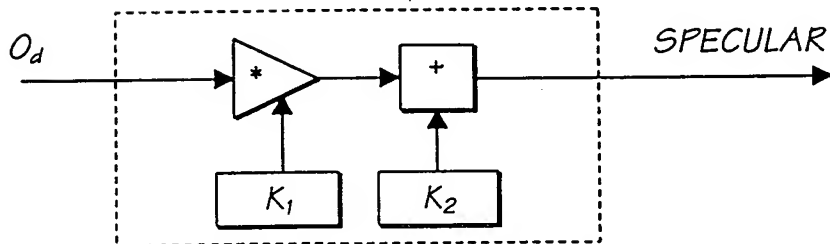


FIG. 143

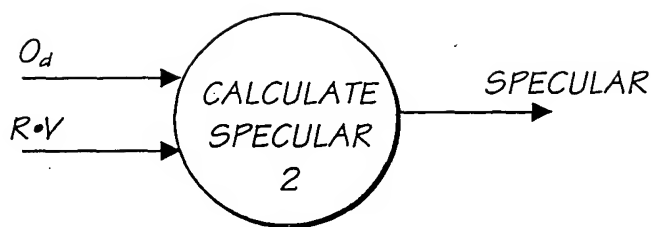


FIG. 144

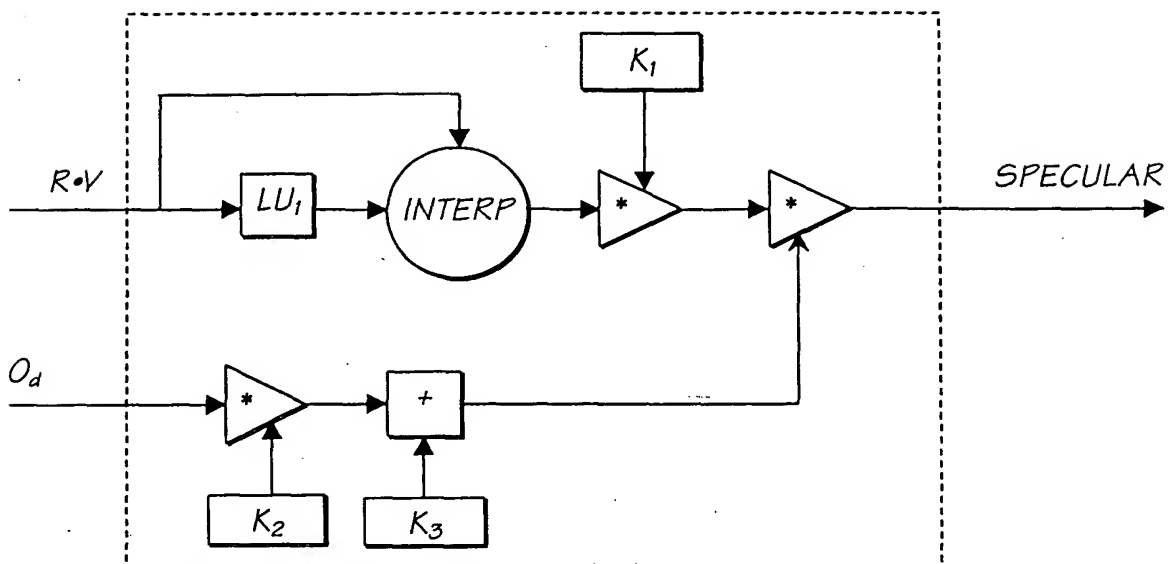


FIG. 145

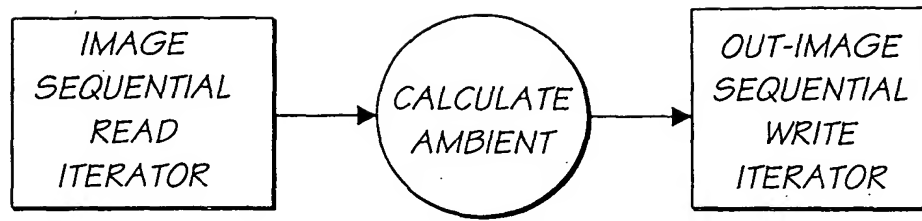
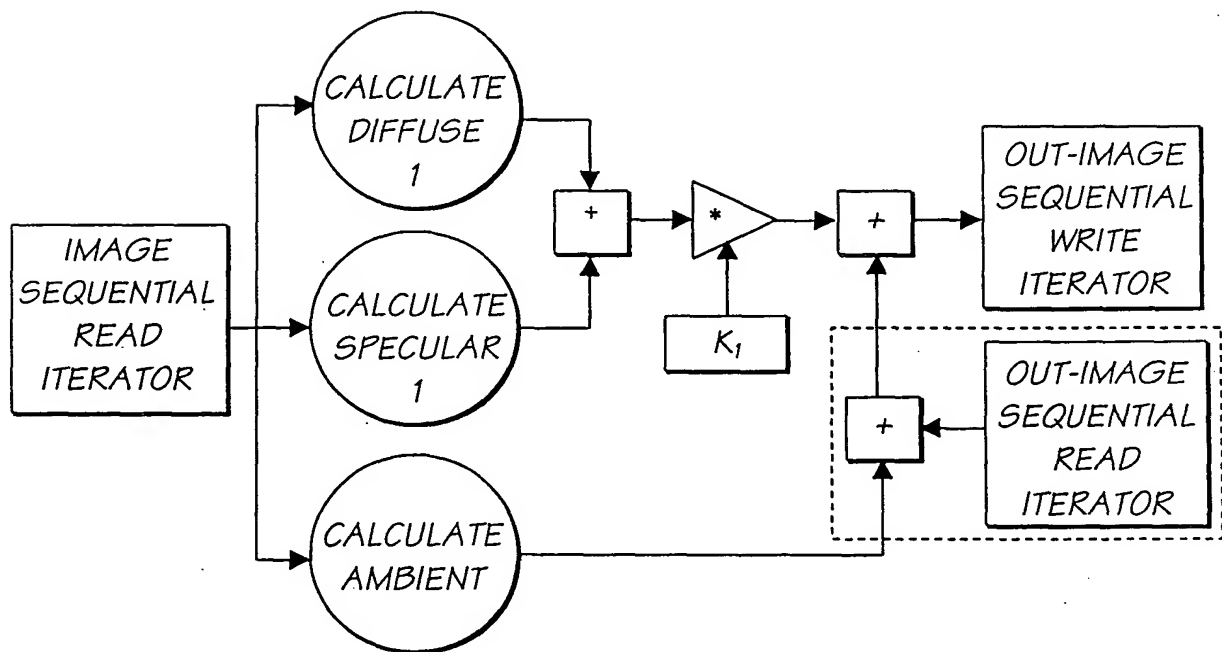


FIG. 146



   2<sup>ND</sup> AND  
 SUBSEQUENT LIGHTS

FIG. 147

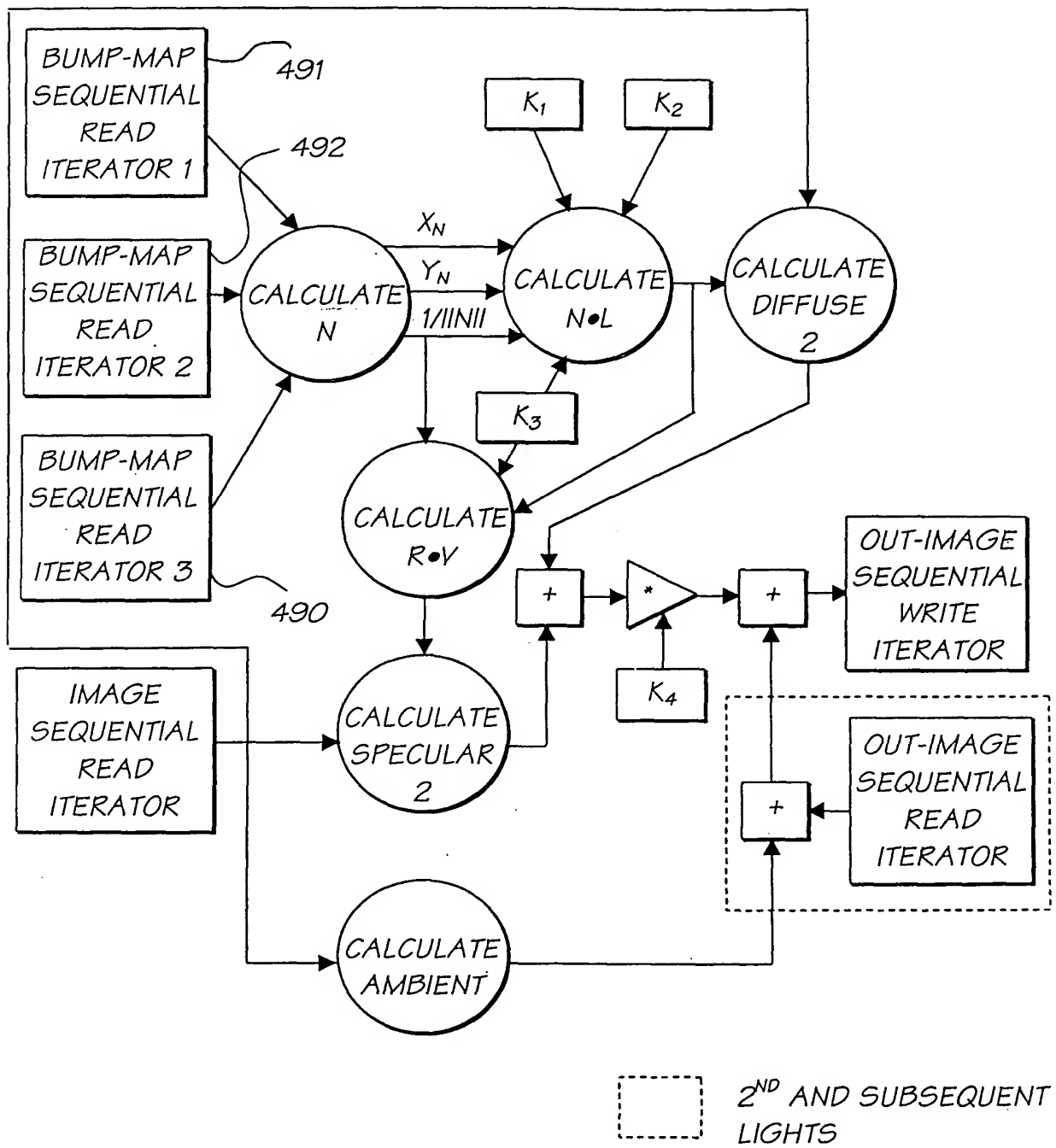


FIG. 148

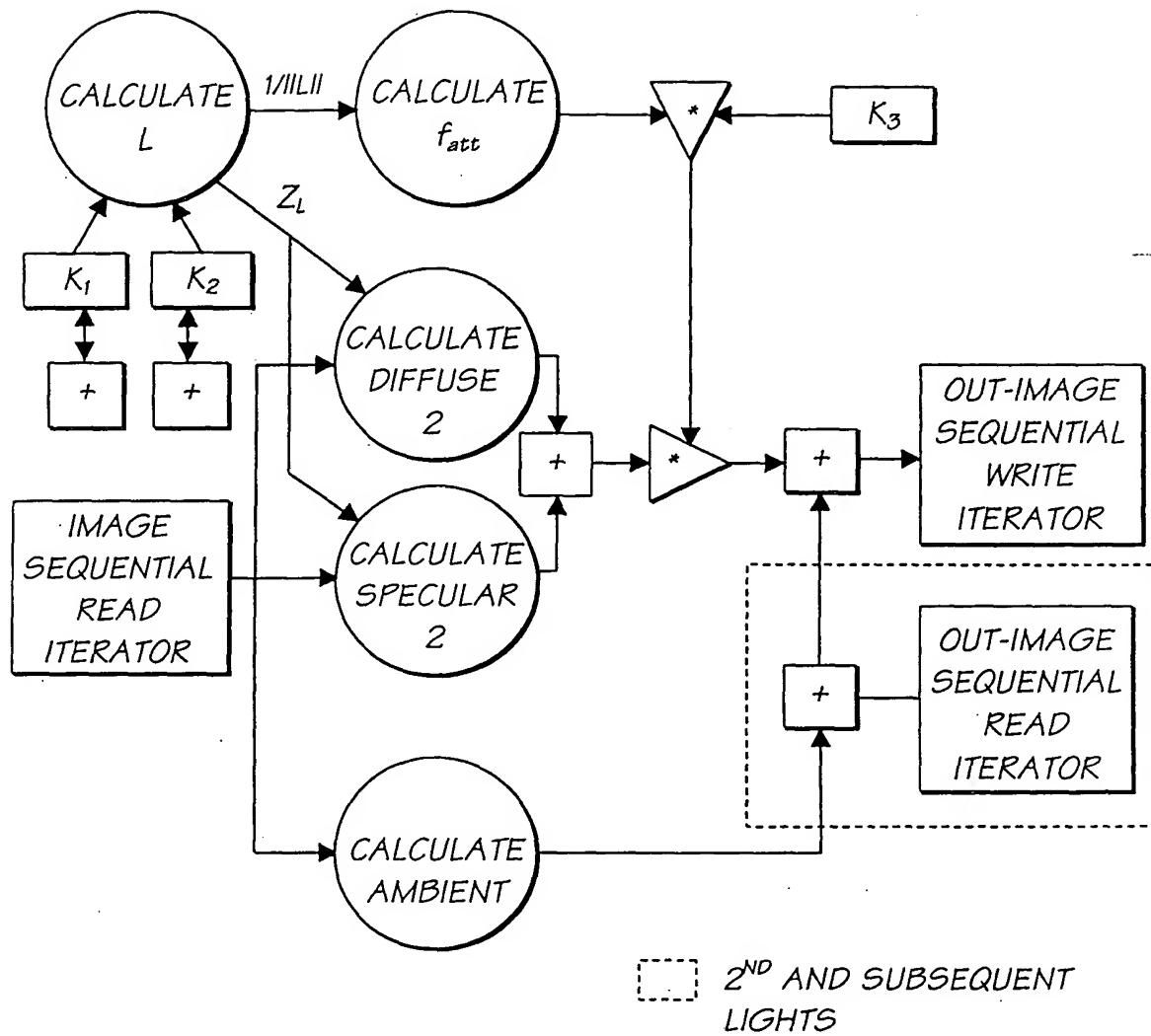


FIG. 149

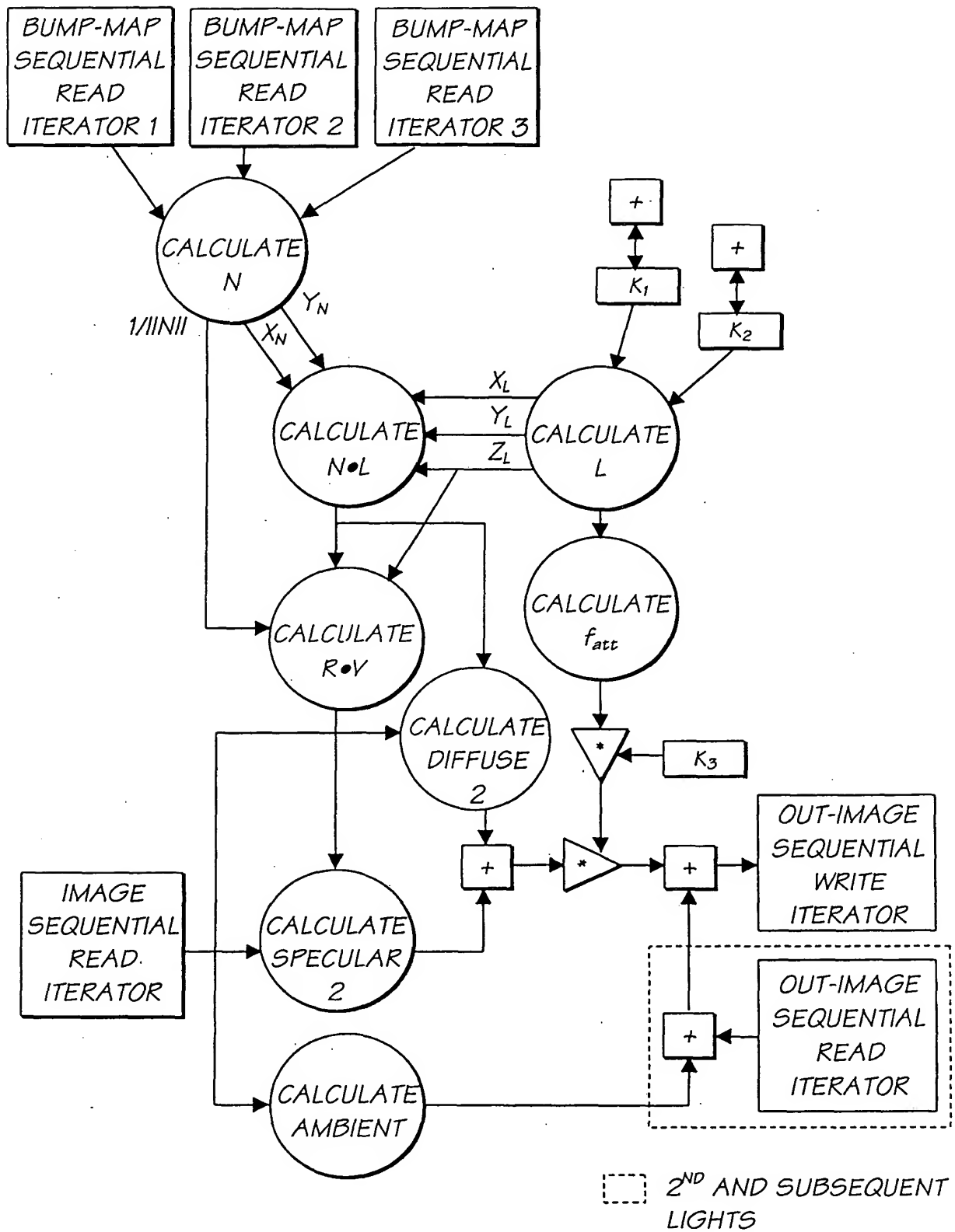


FIG. 150

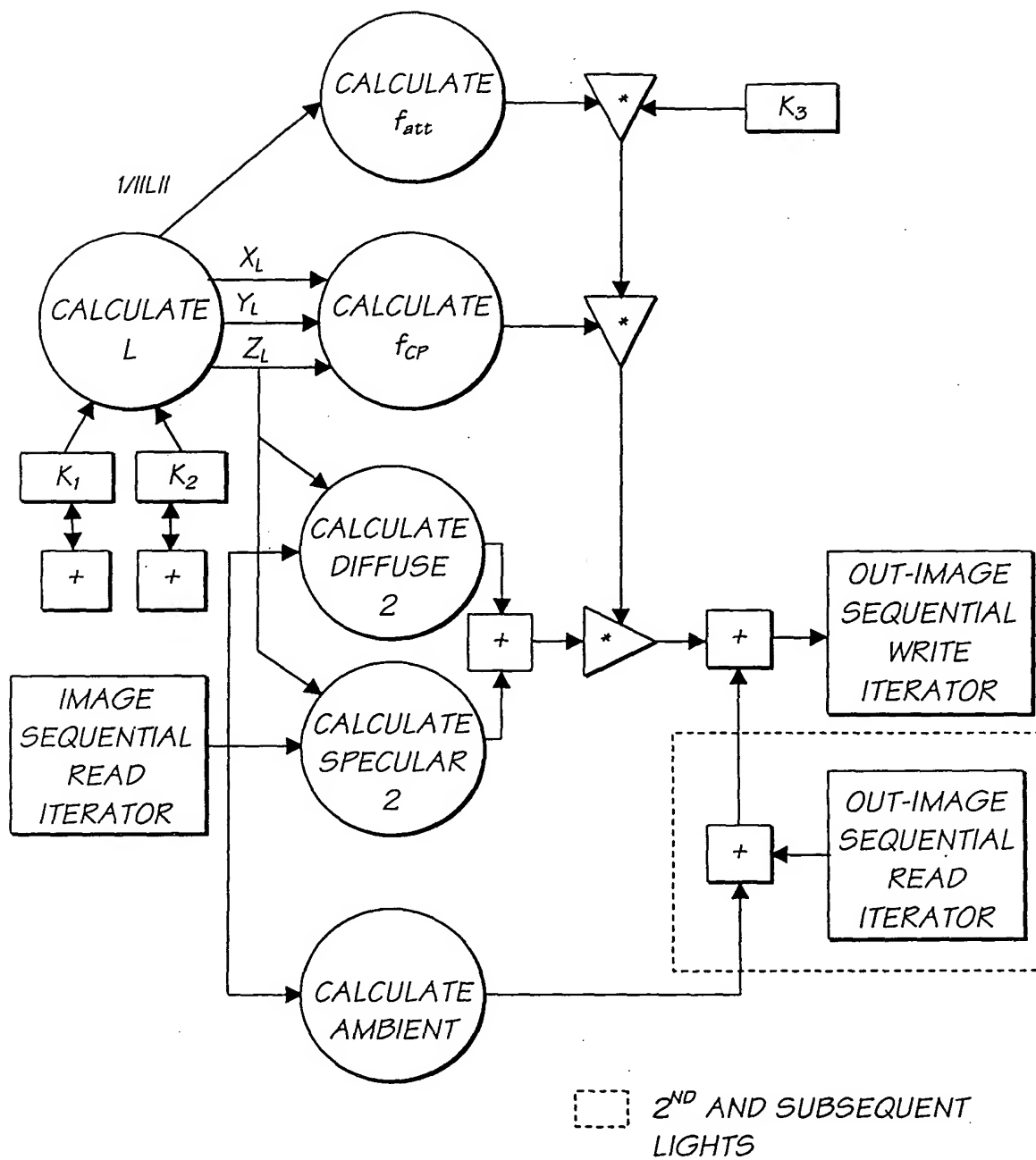


FIG. 151

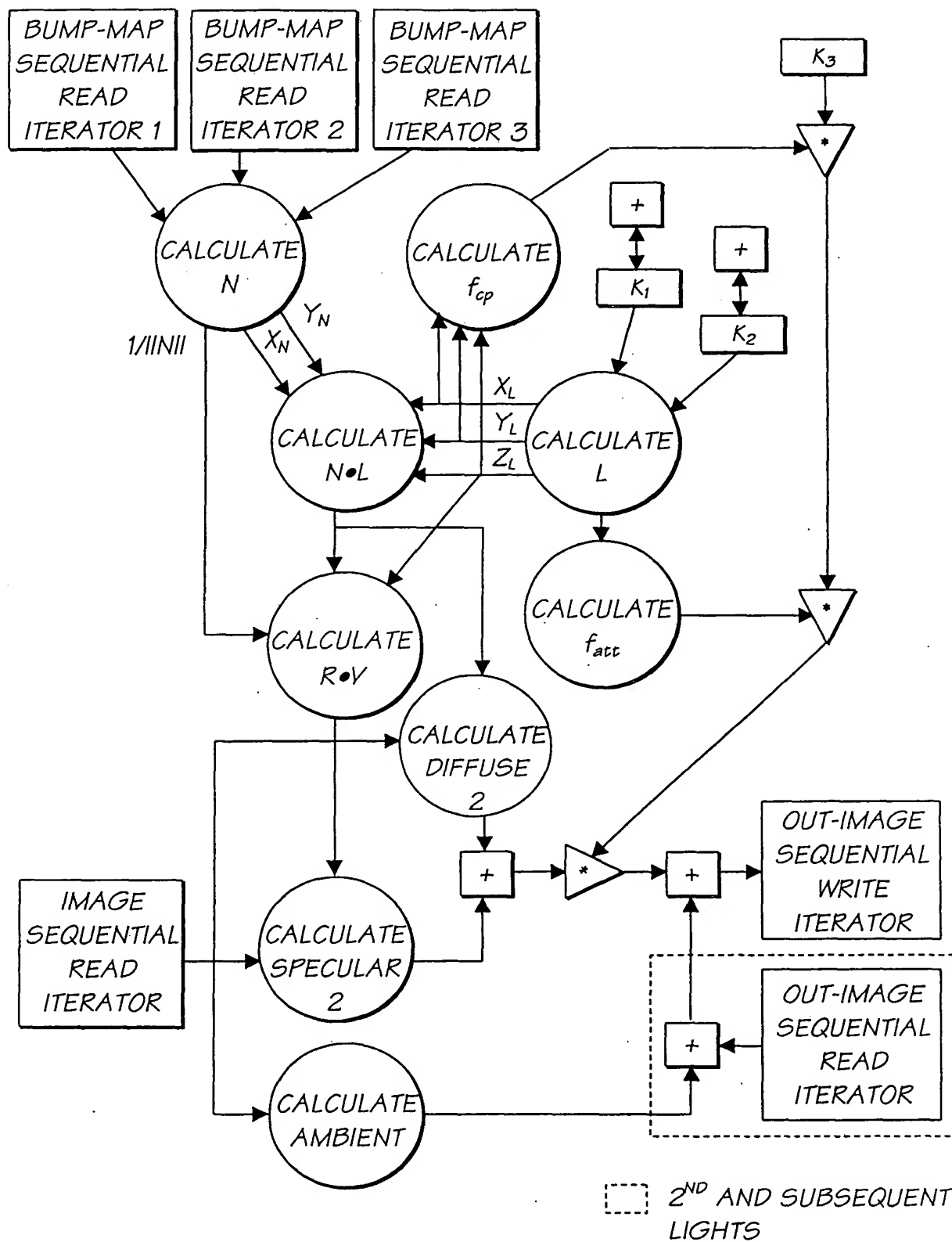
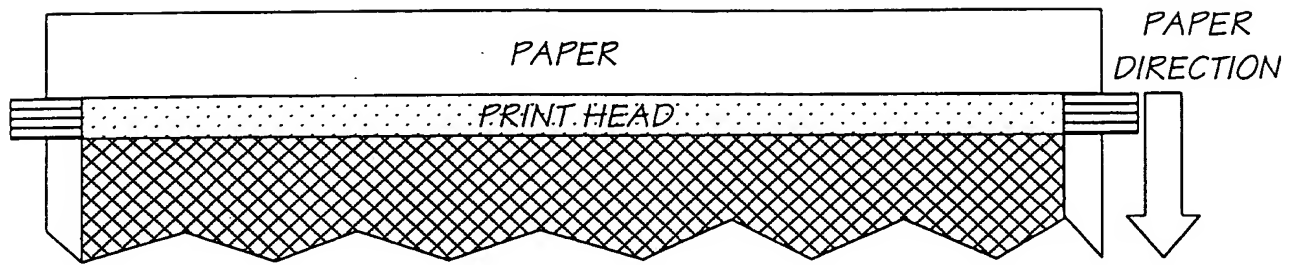


FIG. 152



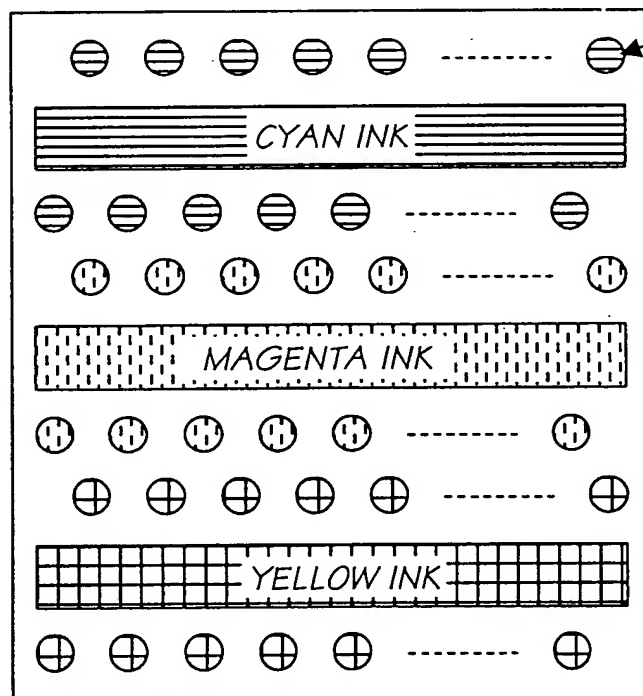
8 PRINT HEAD SEGMENTS IN PRINT HEAD

SEGMENT	SEGMENT	SEGMENT	SEGMENT	SEGMENT	SEGMENT	SEGMENT	SEGMENT
0	1	2	3	4	5	6	7

1250  $\mu\text{M}$  (375 DOTS PER SEGMENT ROW,  
OR 750 DOTS PER SEGMENT COLOR)

1 DOT IS 16.6  $\mu\text{M}$  IN  
DIAMETER

(A 100  $\mu\text{M}$  SQUARE =  
6 X 6 = 36 DOTS)



466.6  $\mu\text{M}$   
(28 DOTS)

33.3  $\mu\text{M}$   
(2 DOTS)

133.3  $\mu\text{M}$   
(8 DOTS)

EACH SEGMENT CONTAINS 6 ROWS OF DOTS:  
ODD AND EVEN CYAN, MAGENTA, AND YELLOW.

FIG. 153

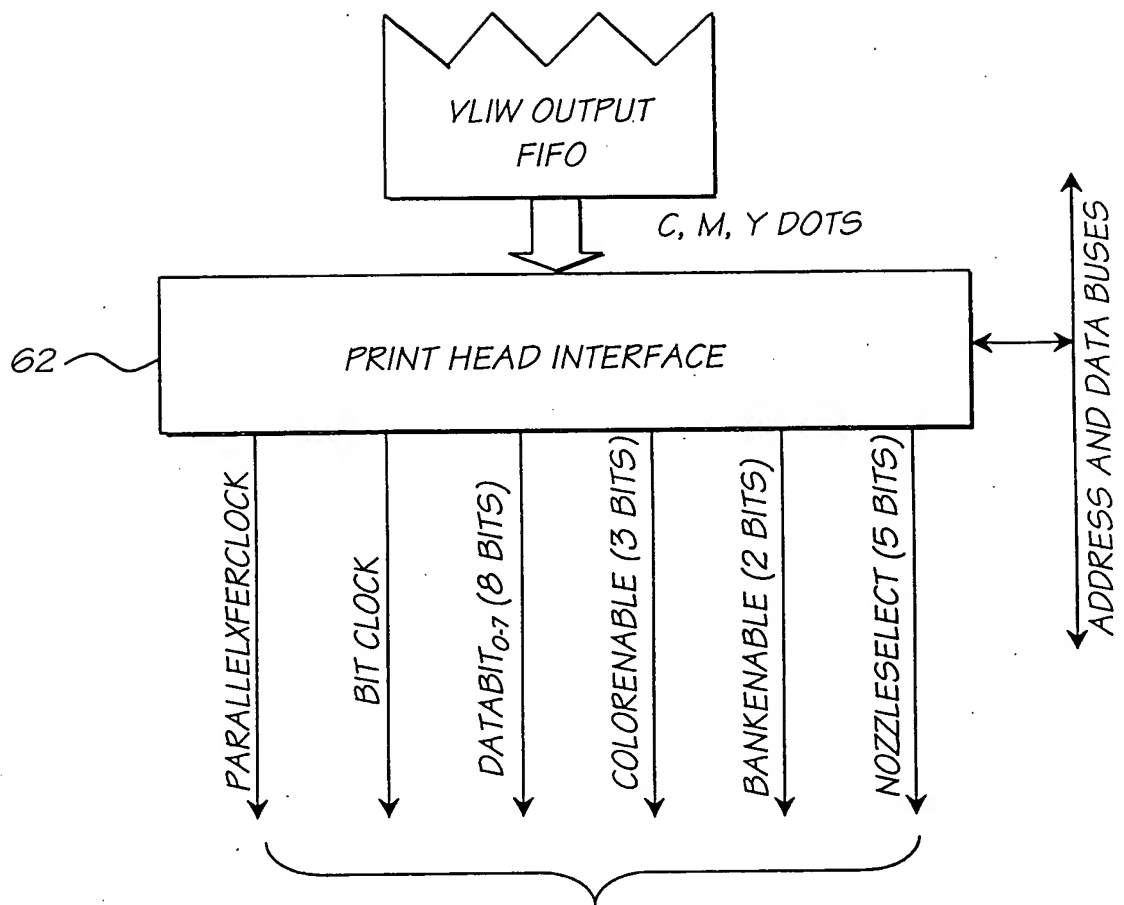


FIG. 154

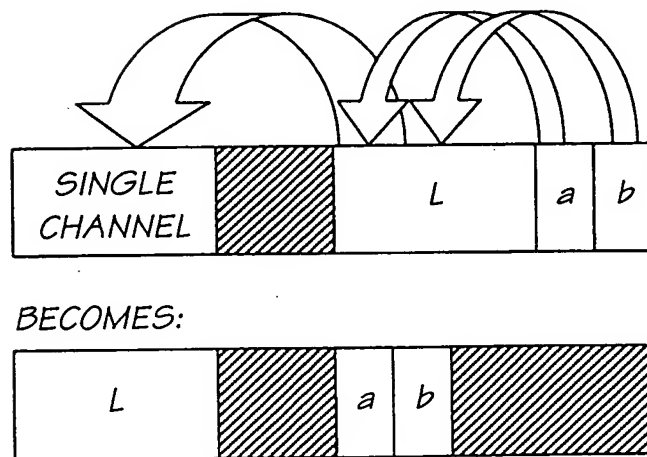
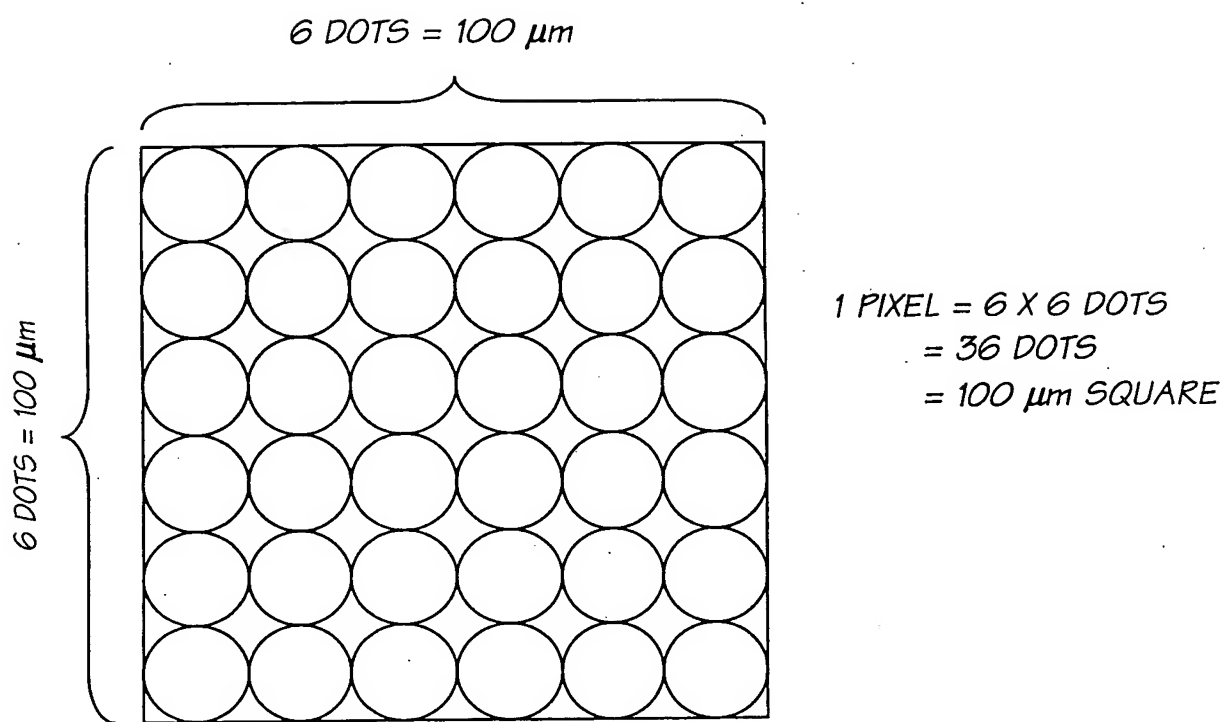


FIG. 155



*FIG. 156*

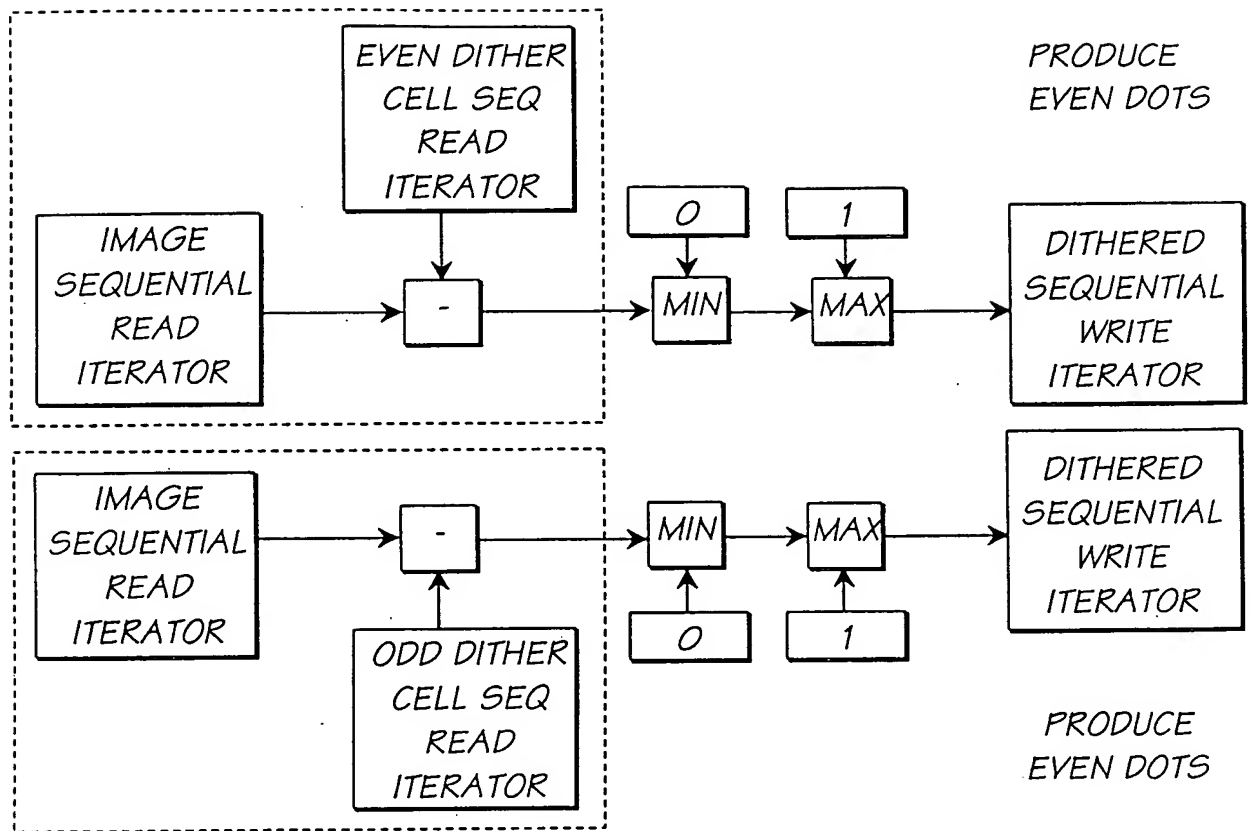


FIG. 157

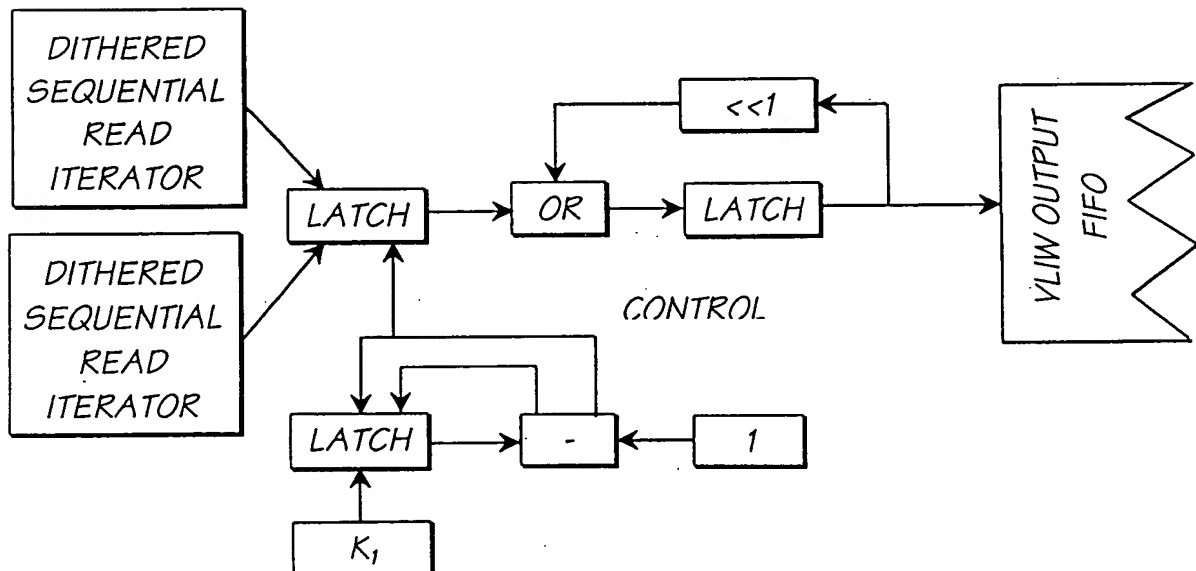


FIG. 158

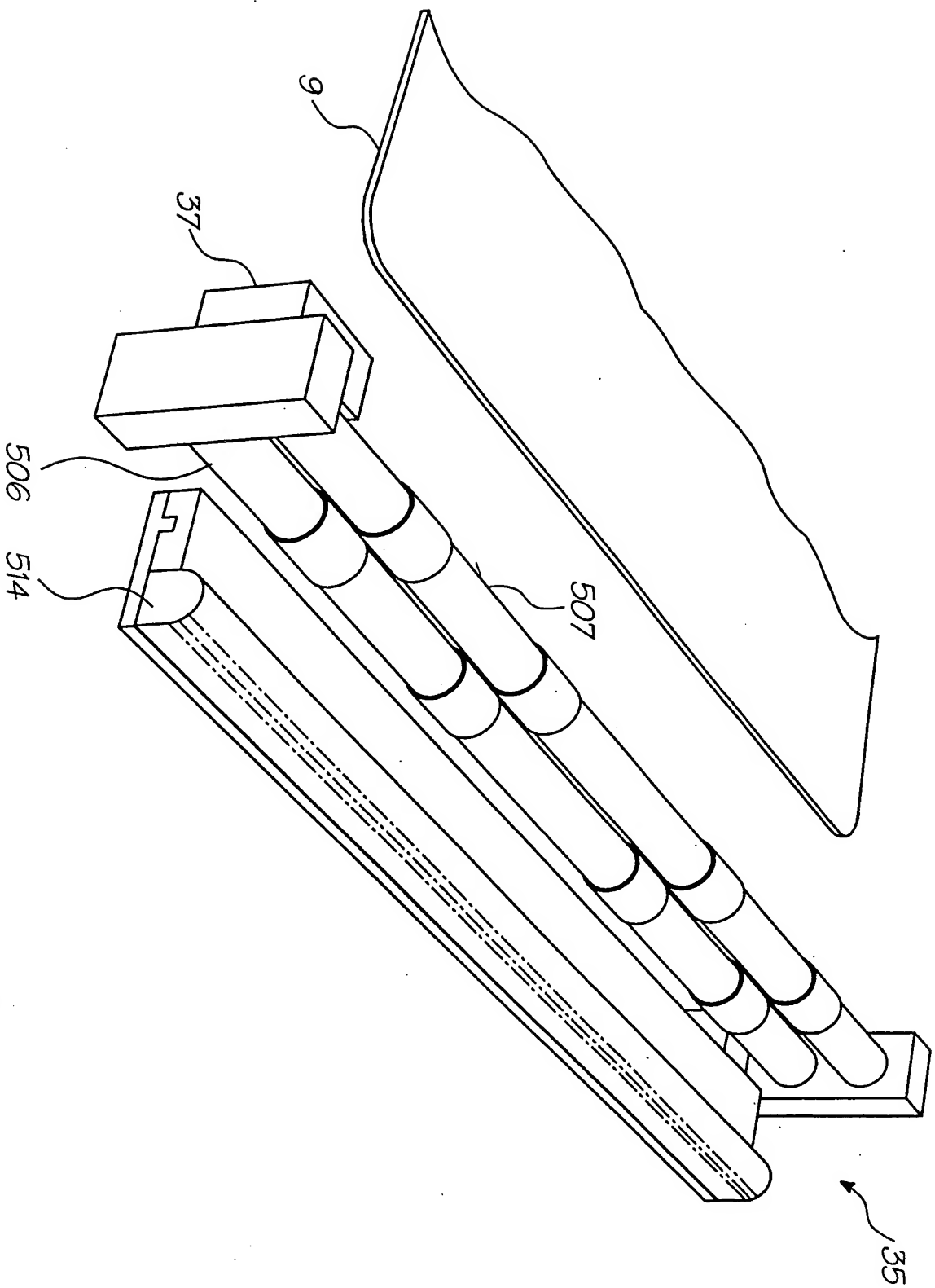
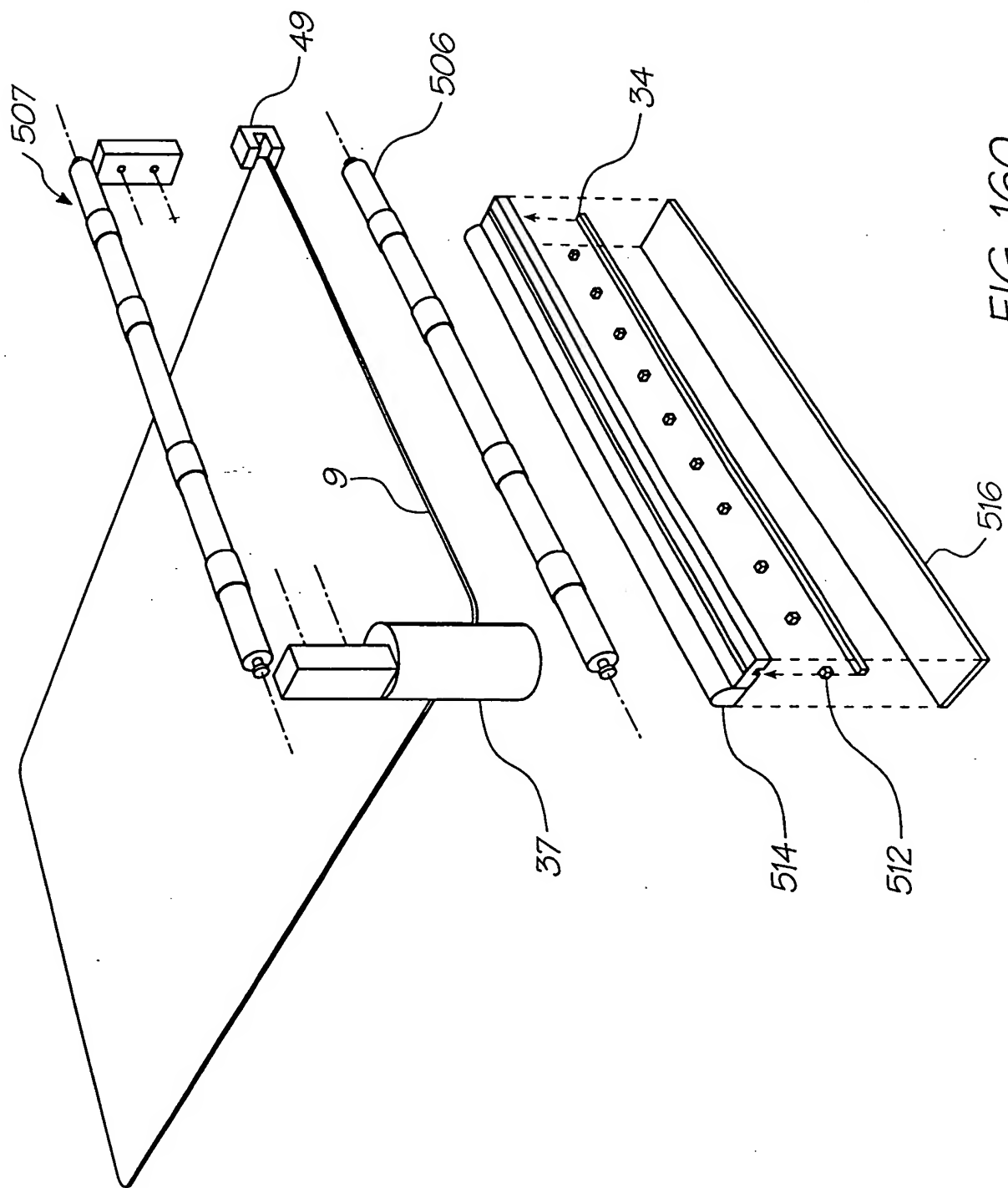
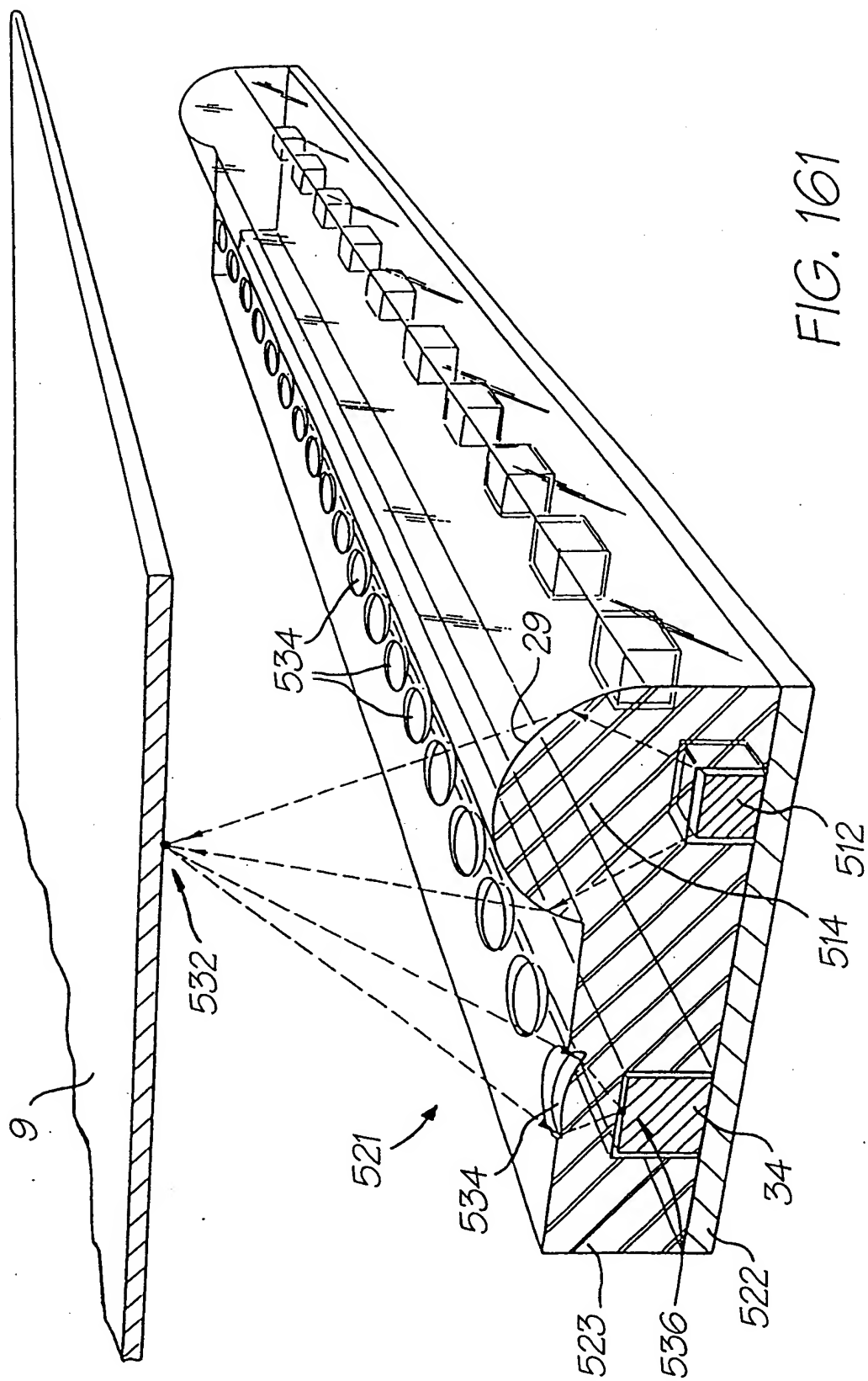


FIG. 159





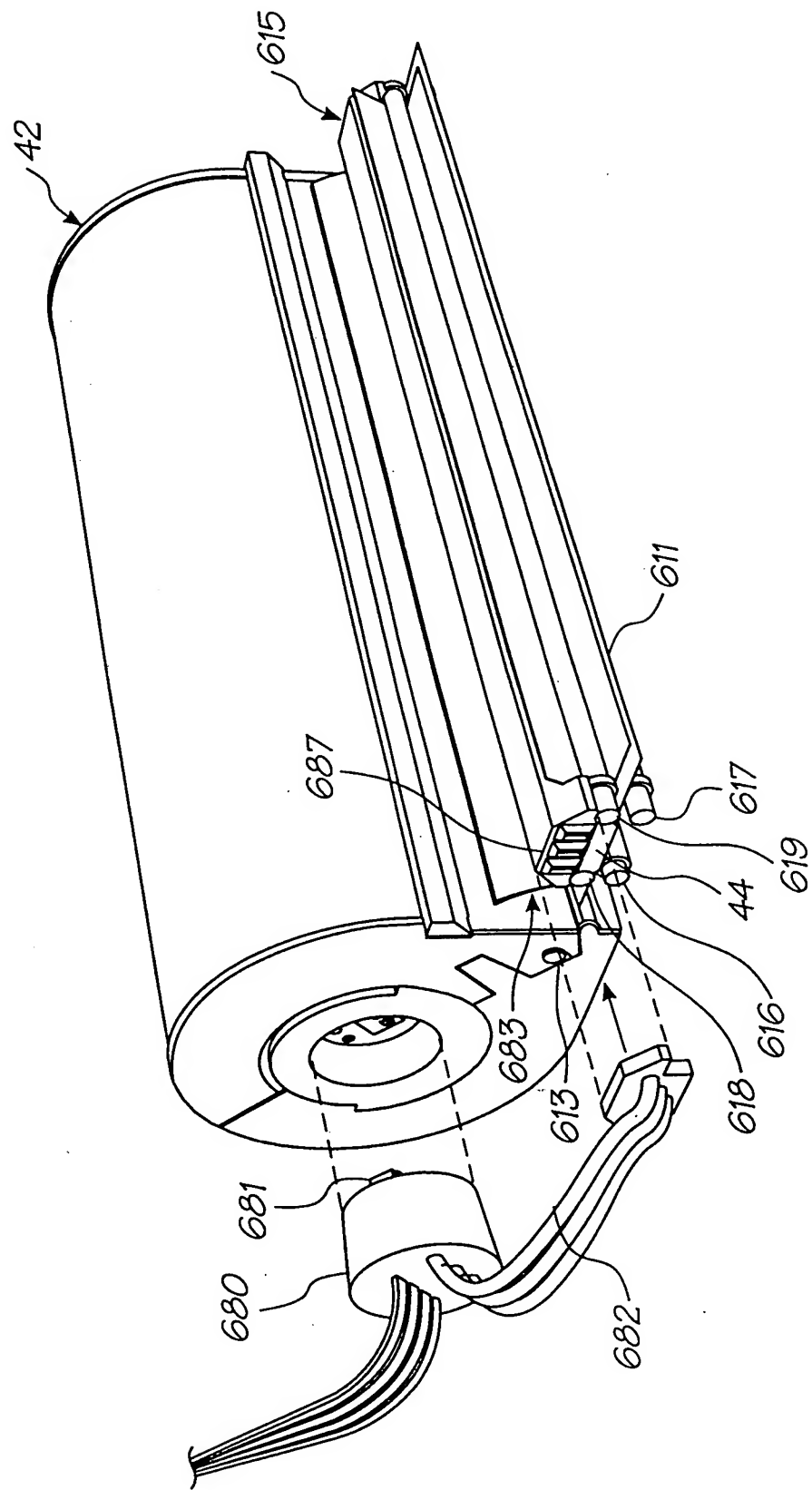


FIG. 162

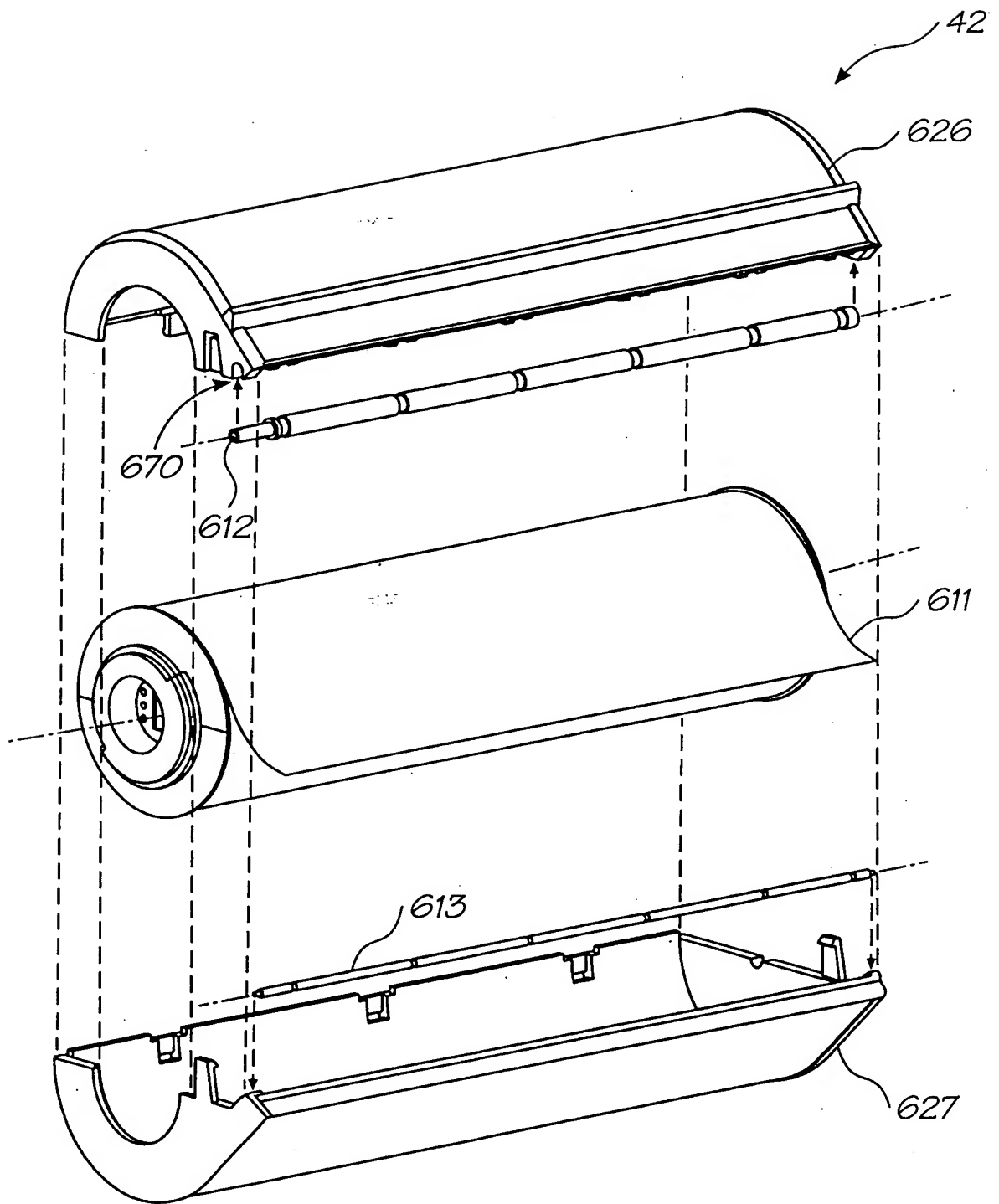


FIG. 163

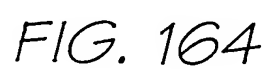


FIG. 164

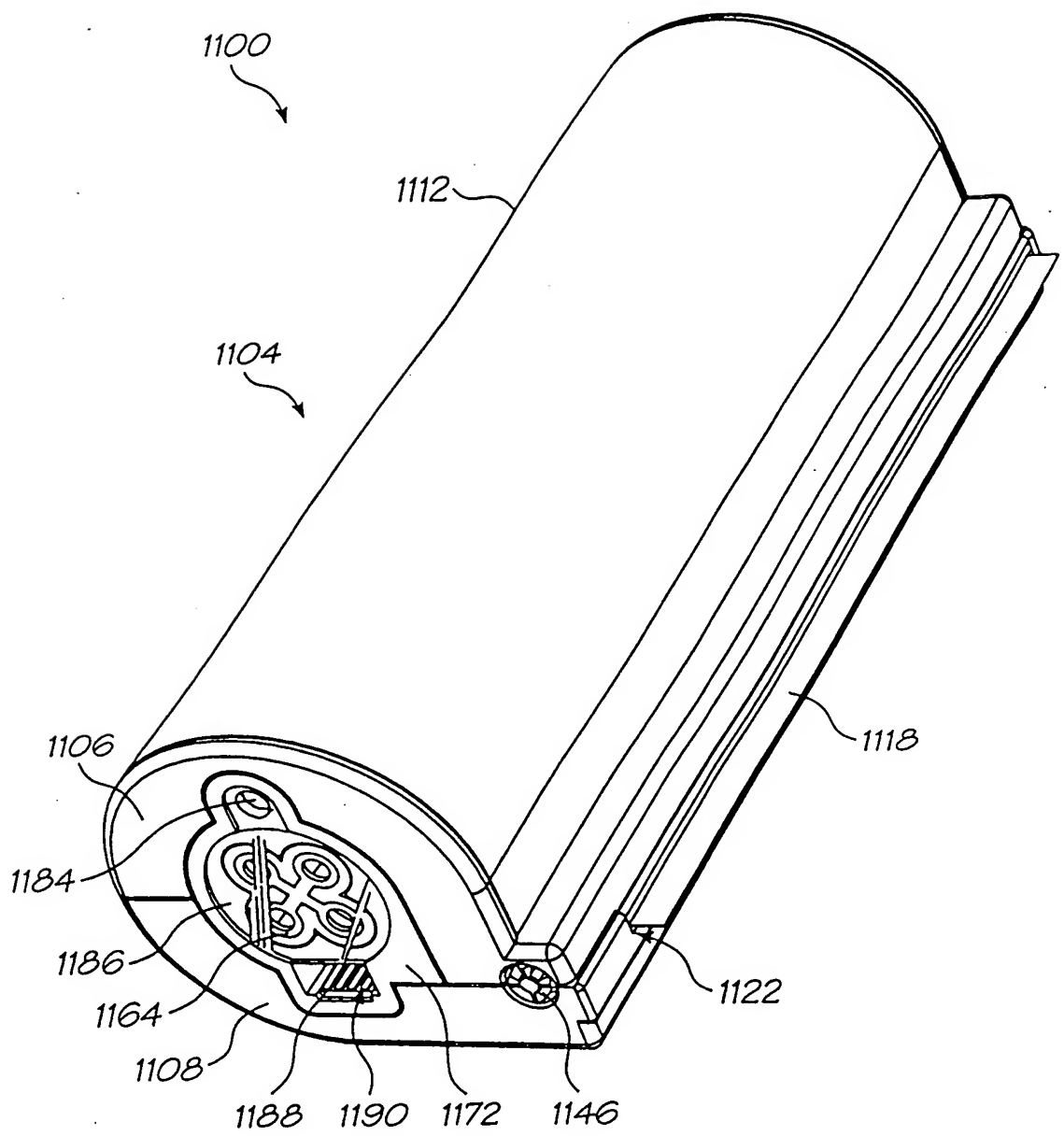


FIG. 164A

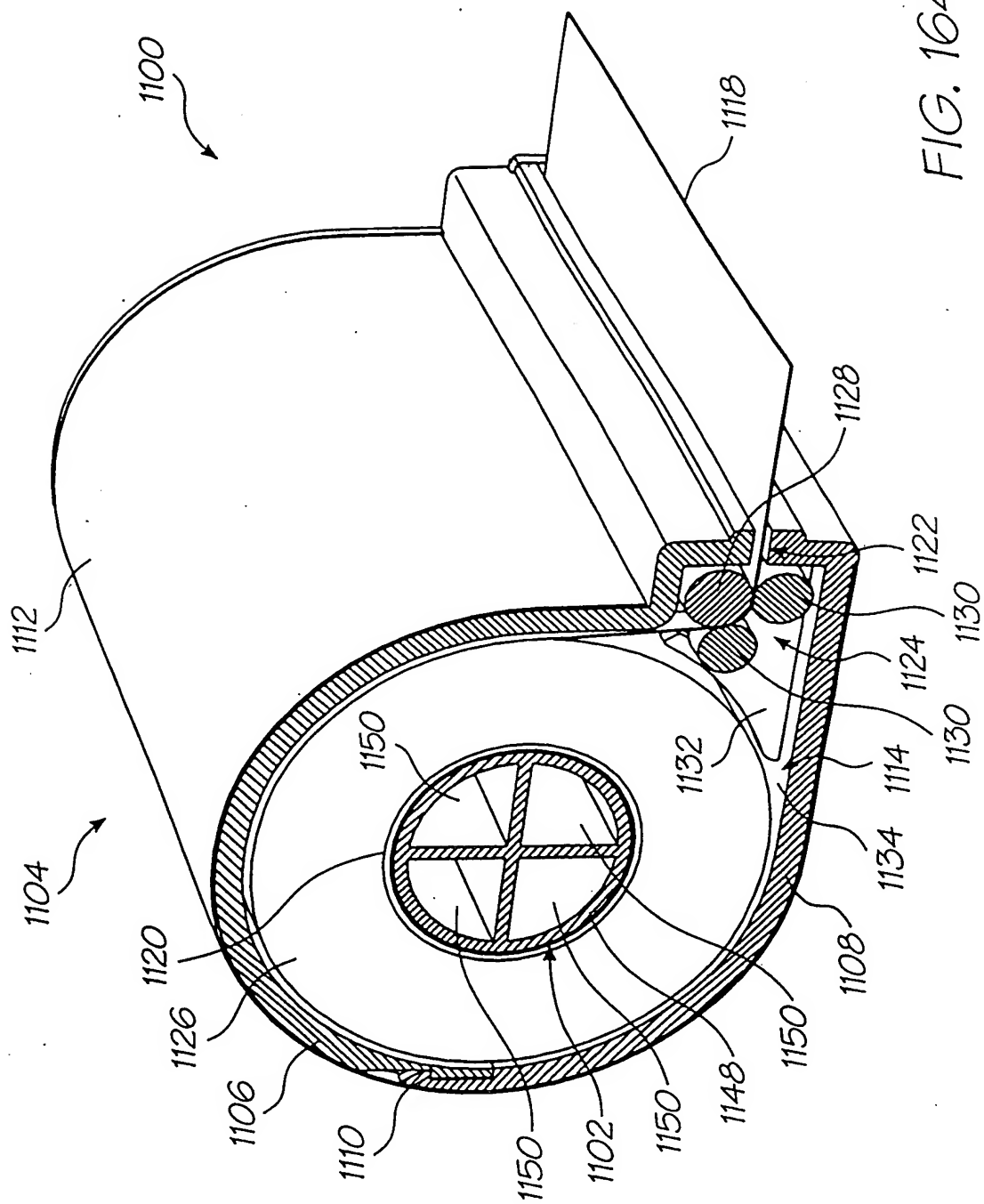


FIG. 164B

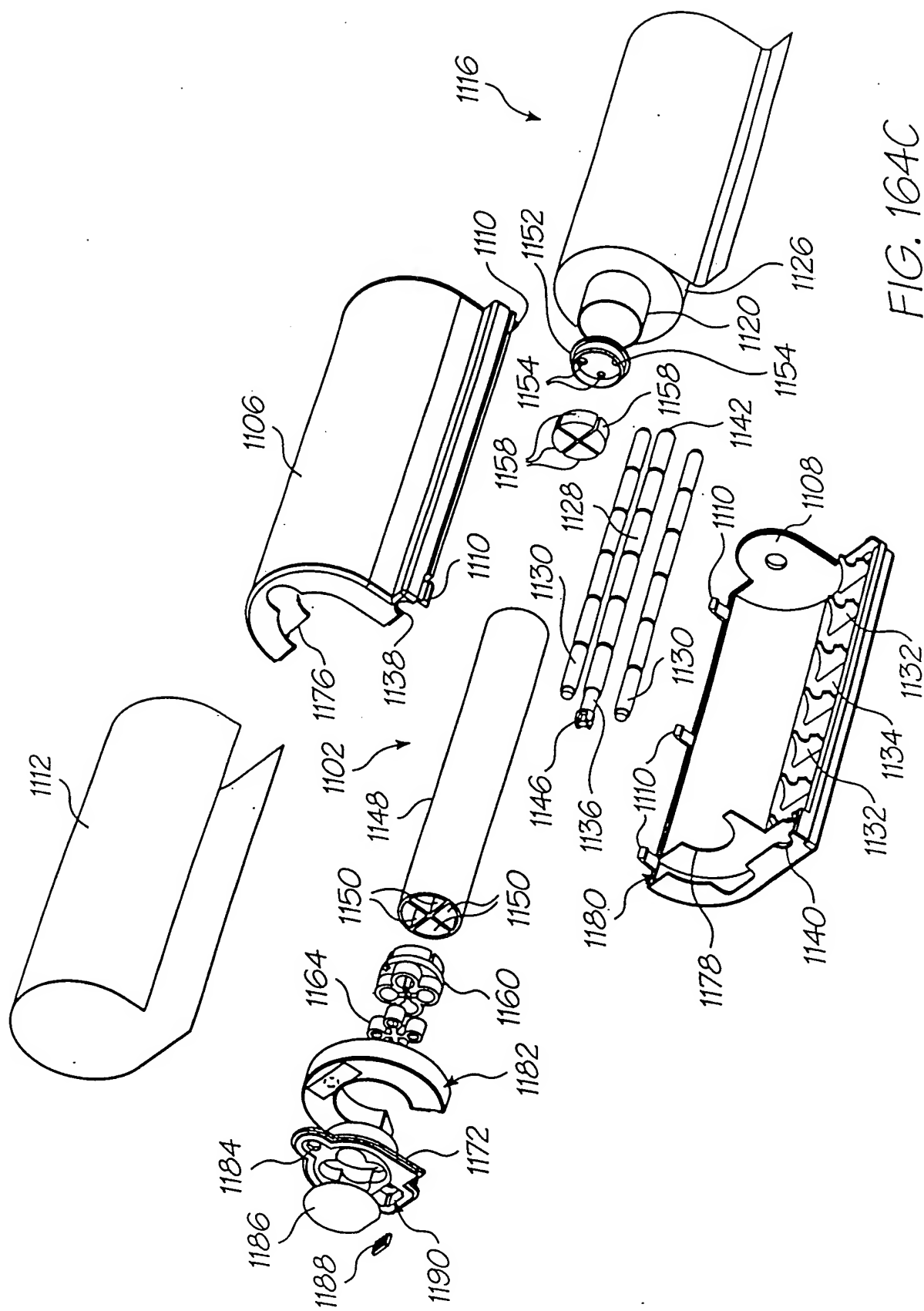


FIG. 164C

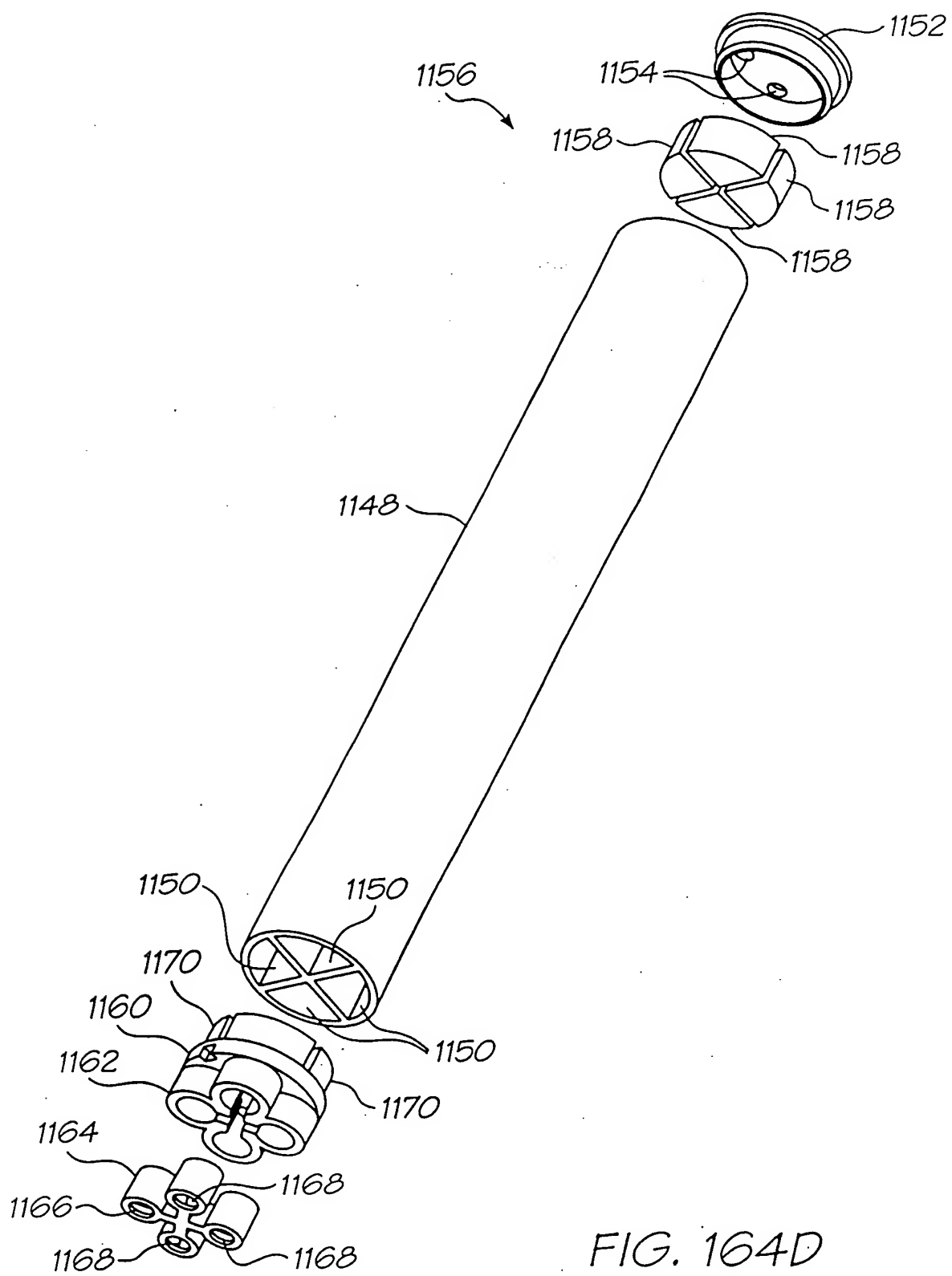


FIG. 164D

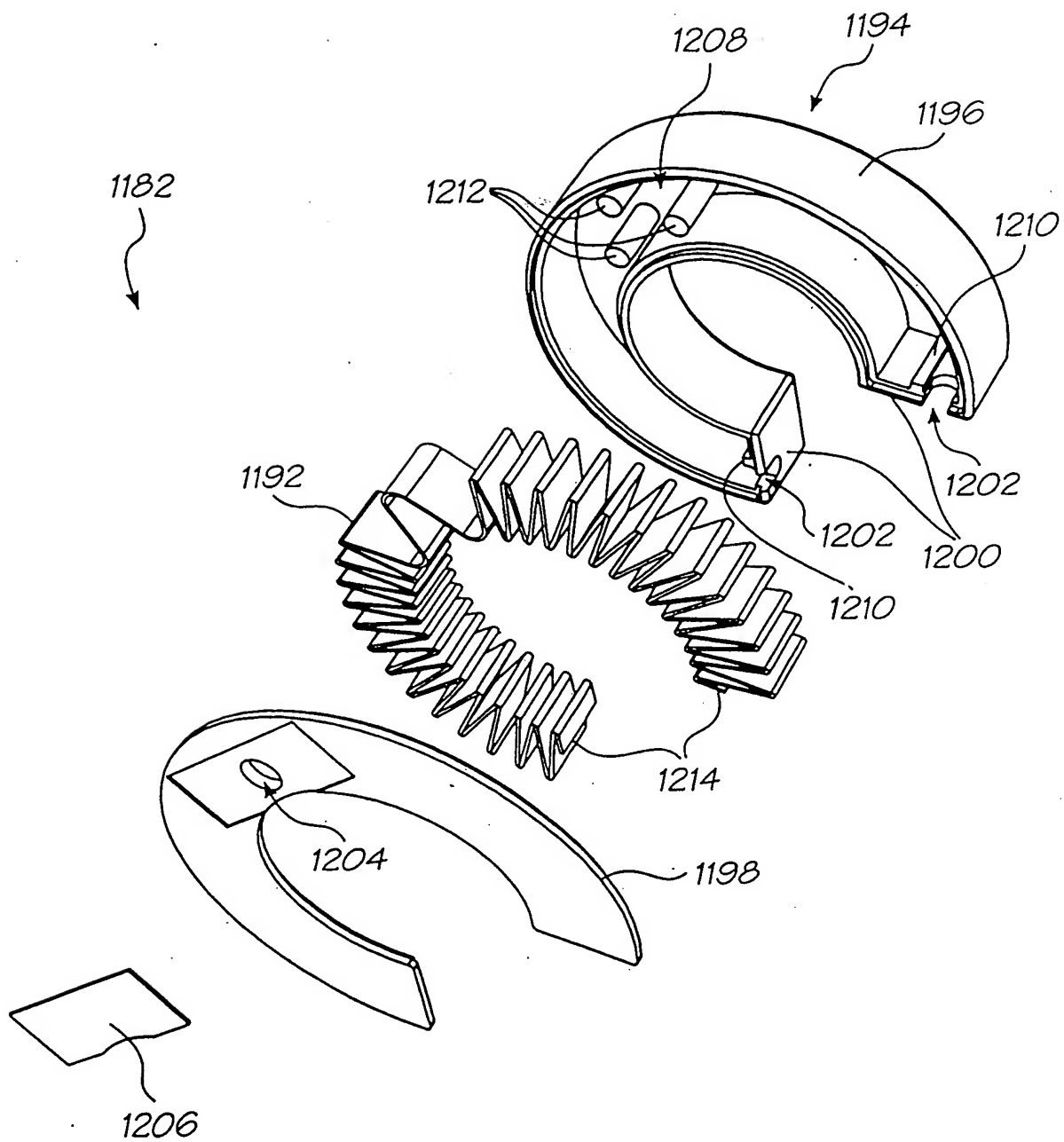


FIG. 164E

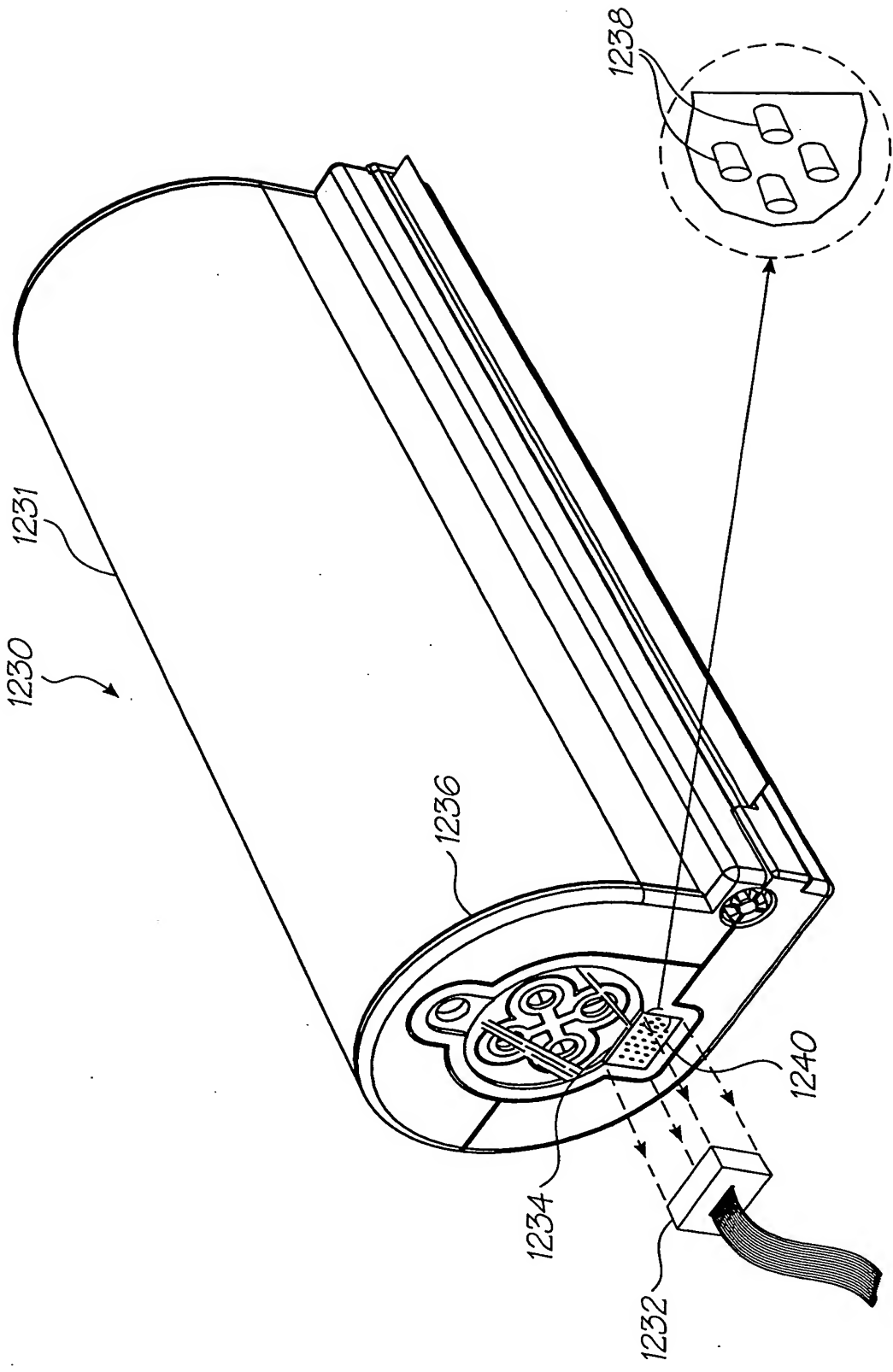


FIG. 164G

FIG. 164F

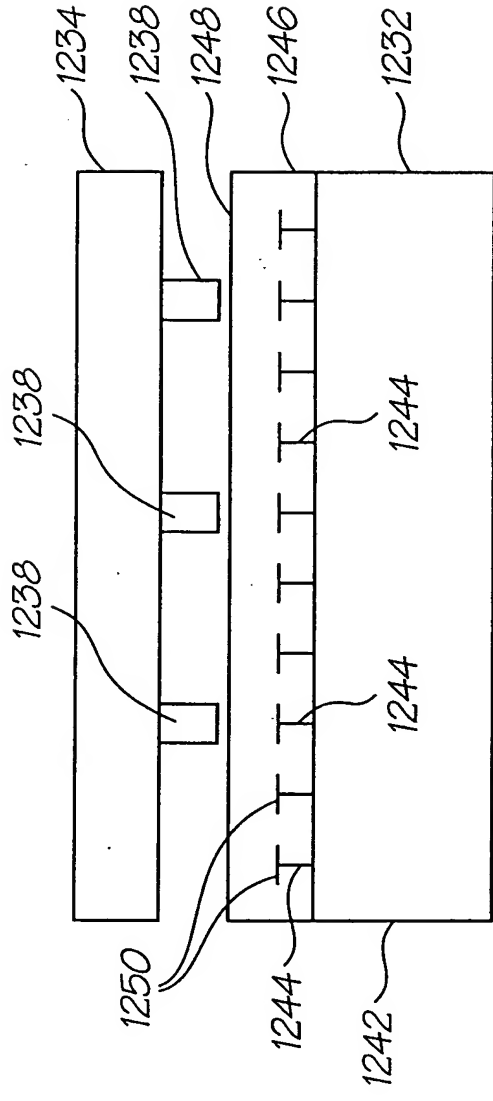


FIG. 164H

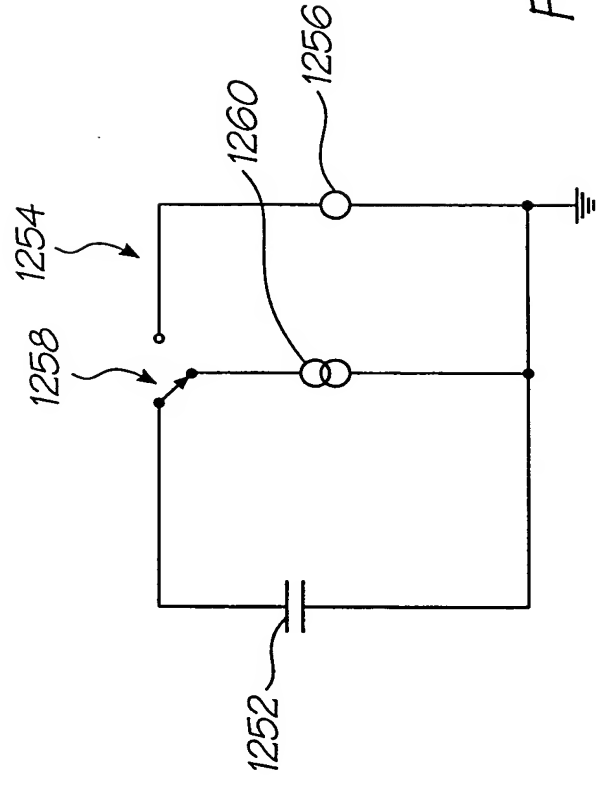


FIG. 164I

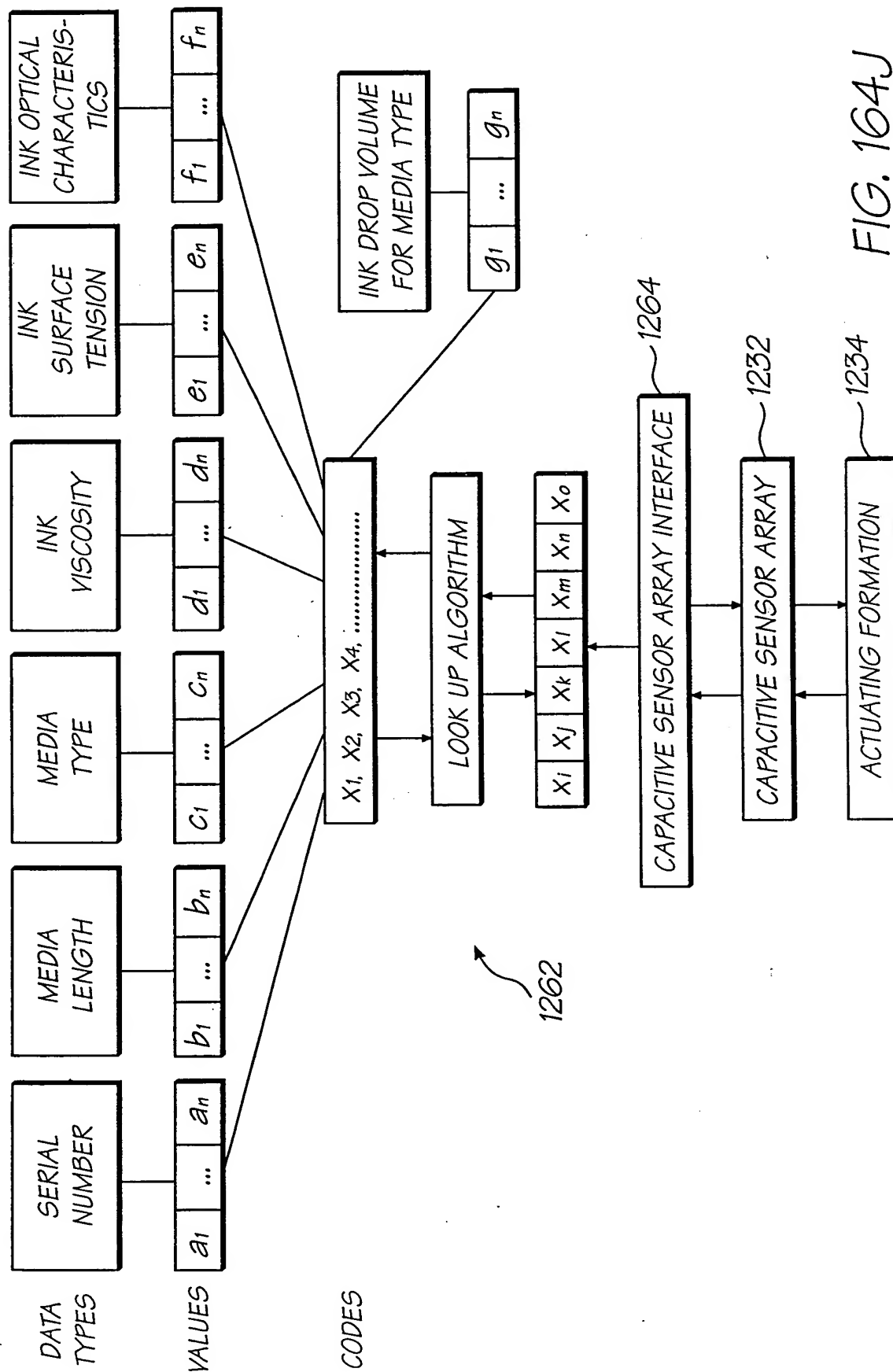


FIG. 164J

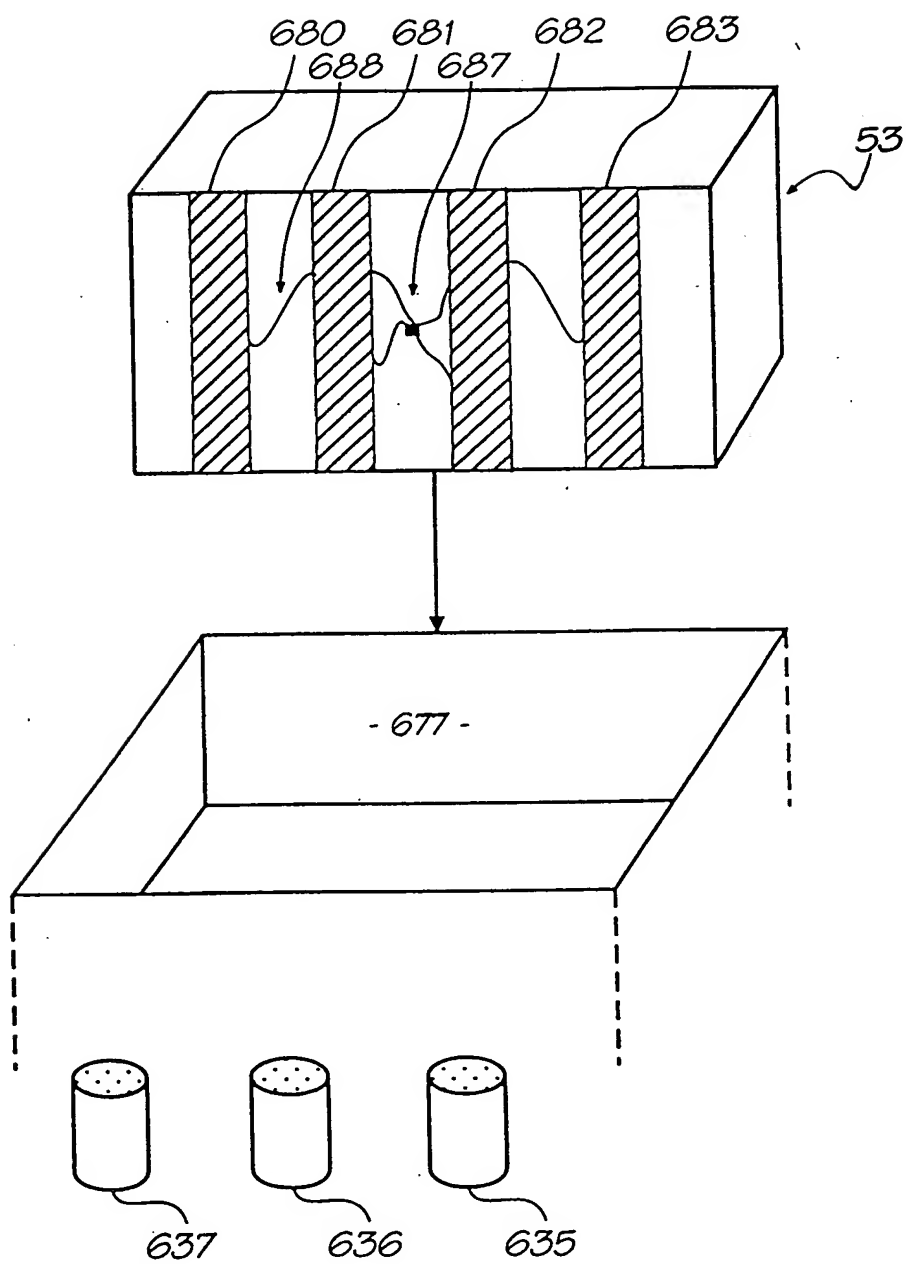


FIG. 165

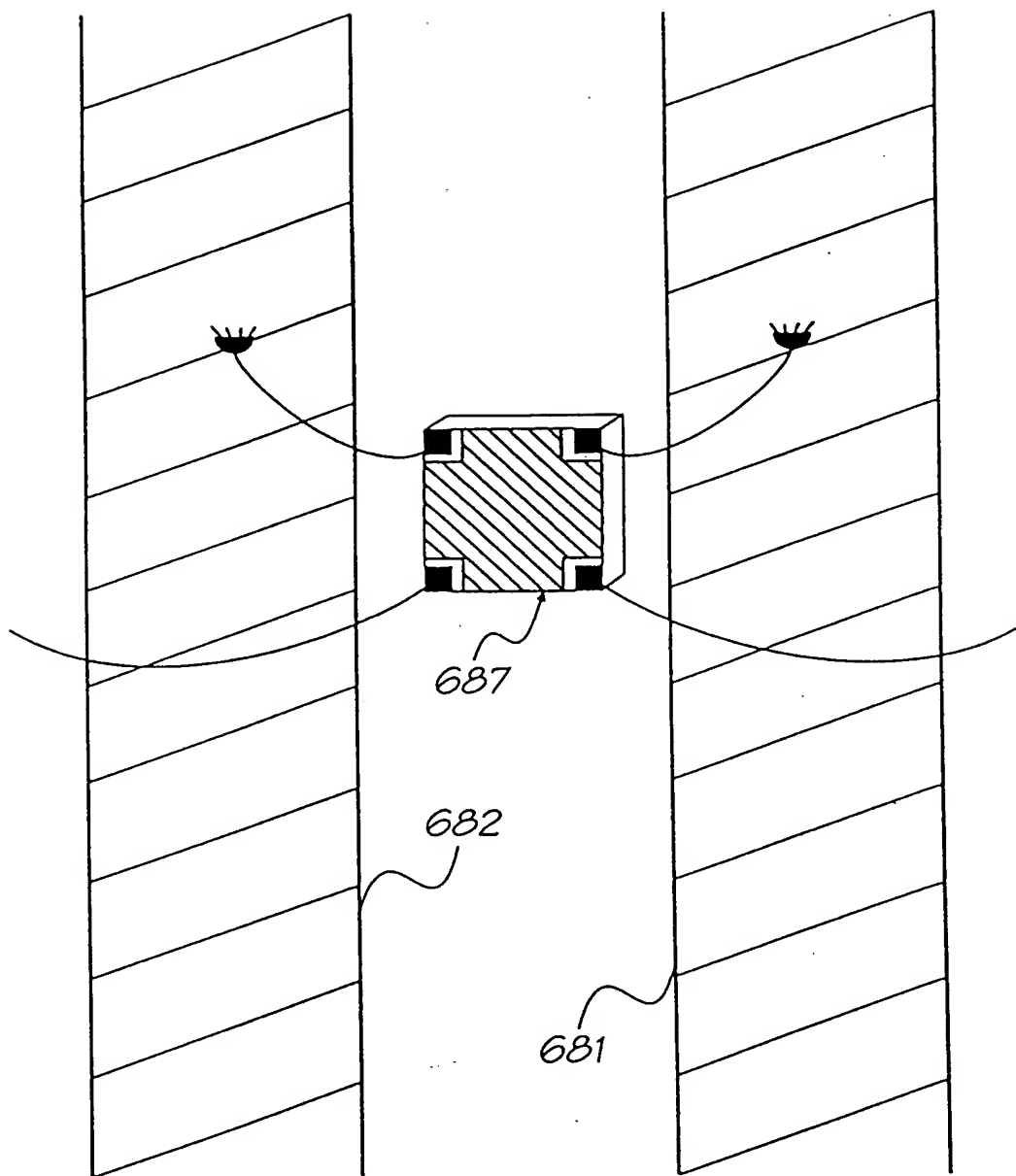


FIG. 166

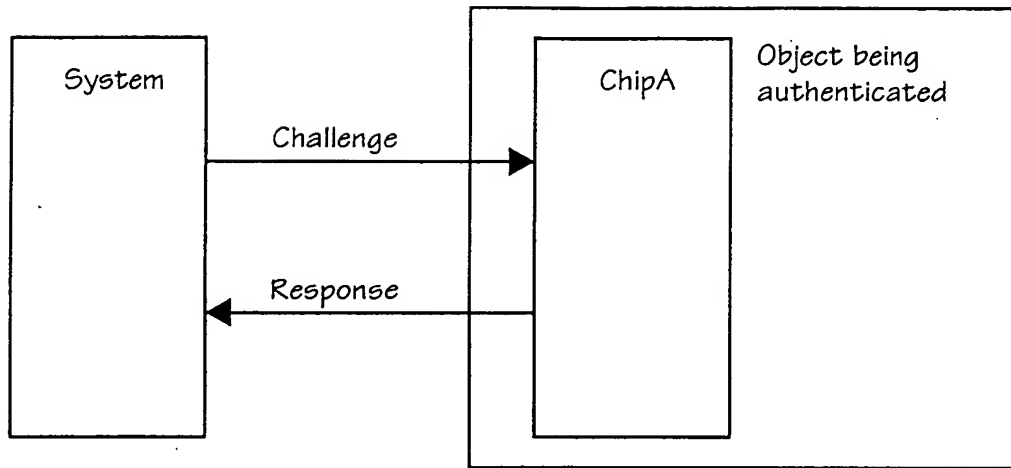


FIG. 167

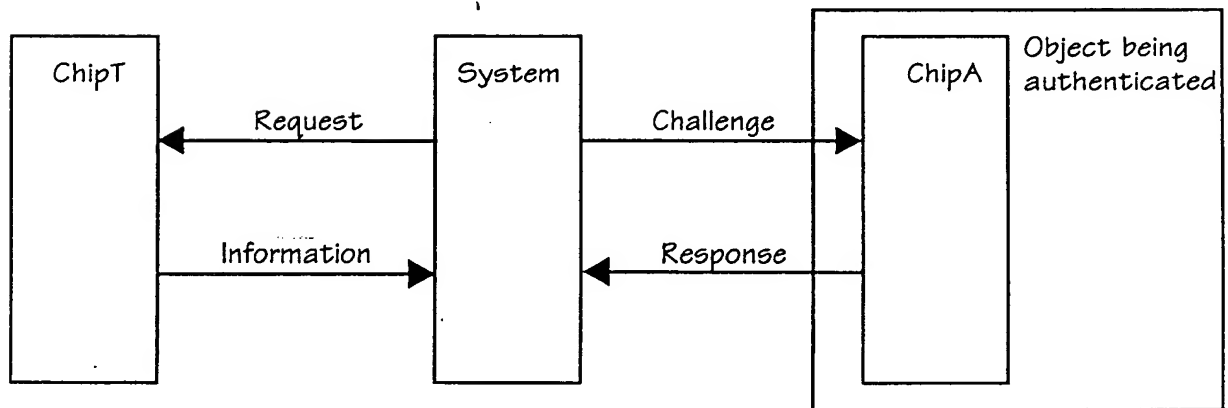


FIG. 168

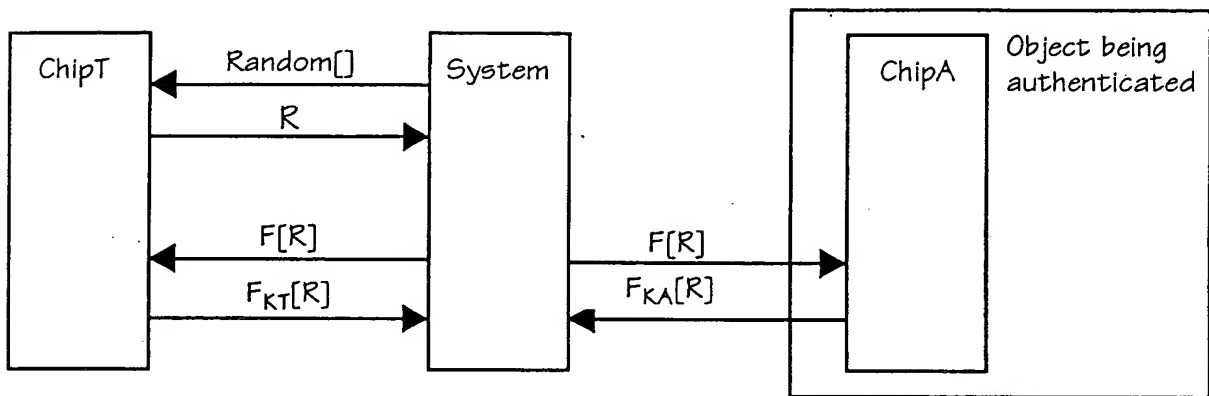


FIG. 169

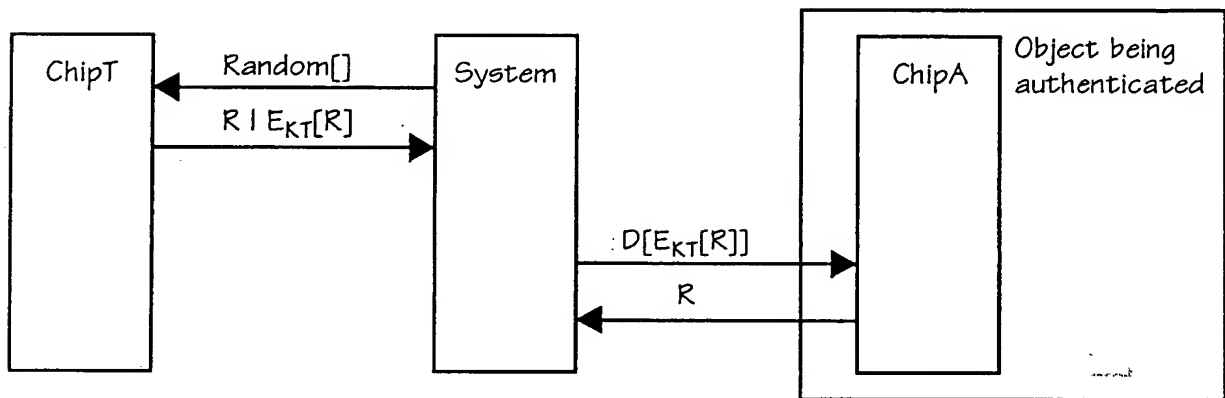


FIG. 170

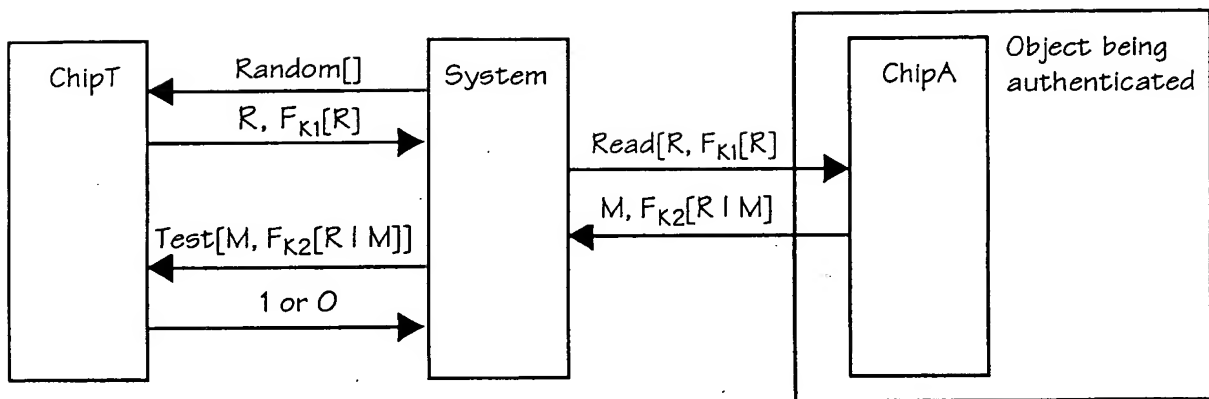


FIG. 171

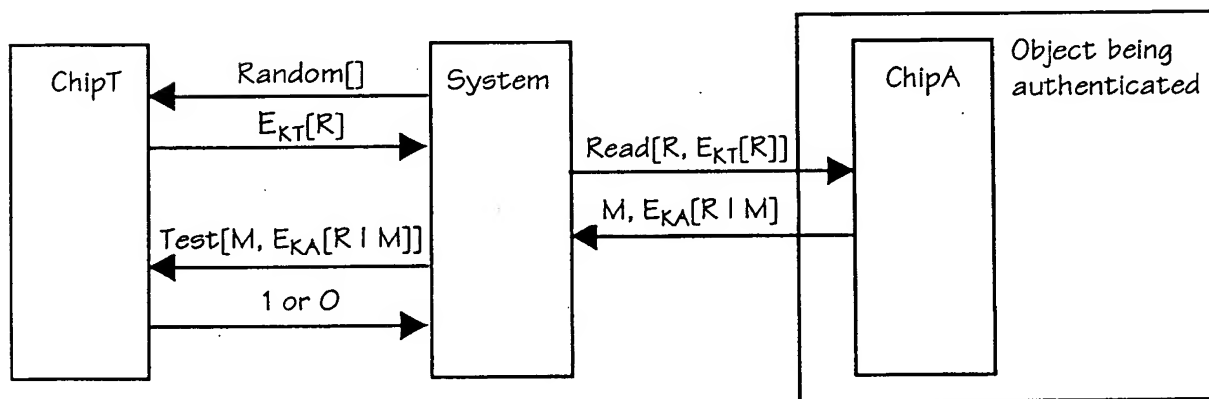


FIG. 172

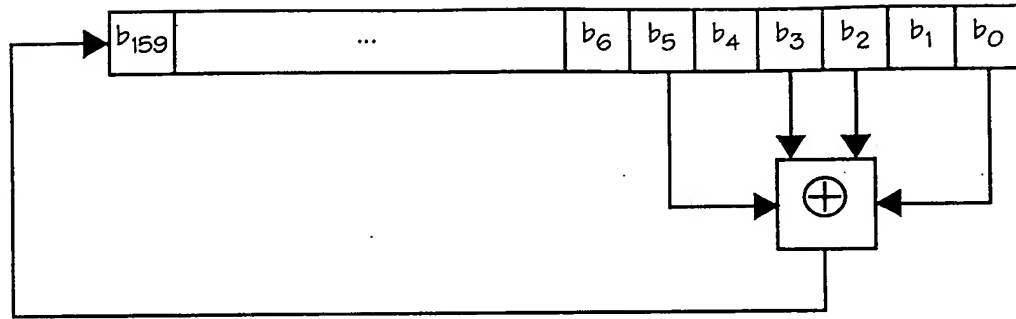


FIG. 173

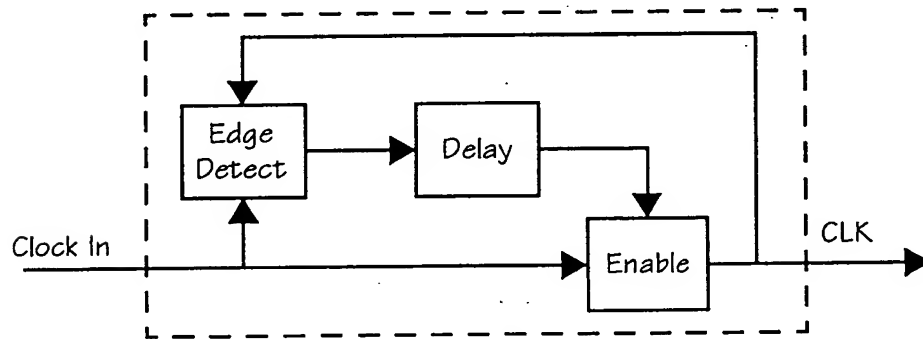


FIG. 174

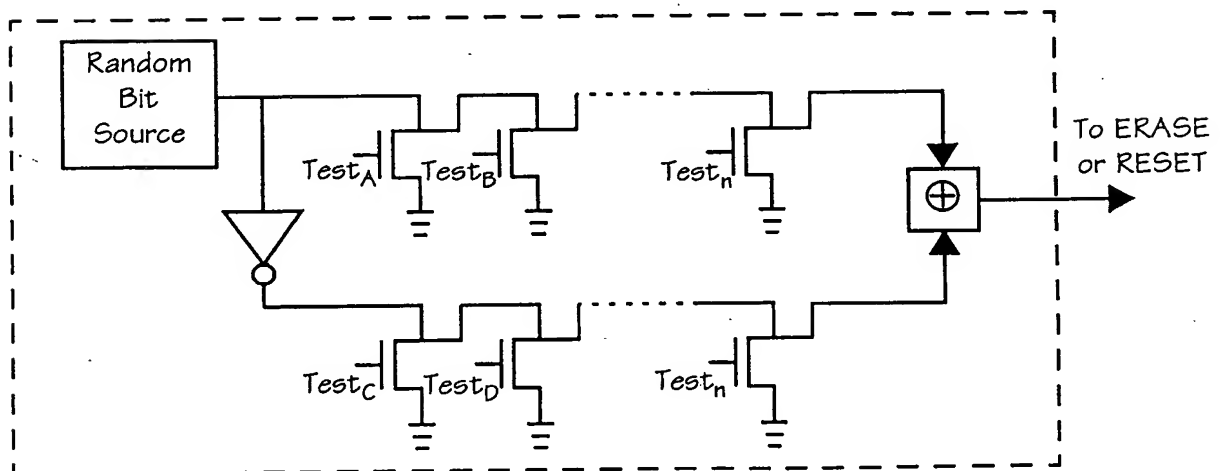


FIG. 175

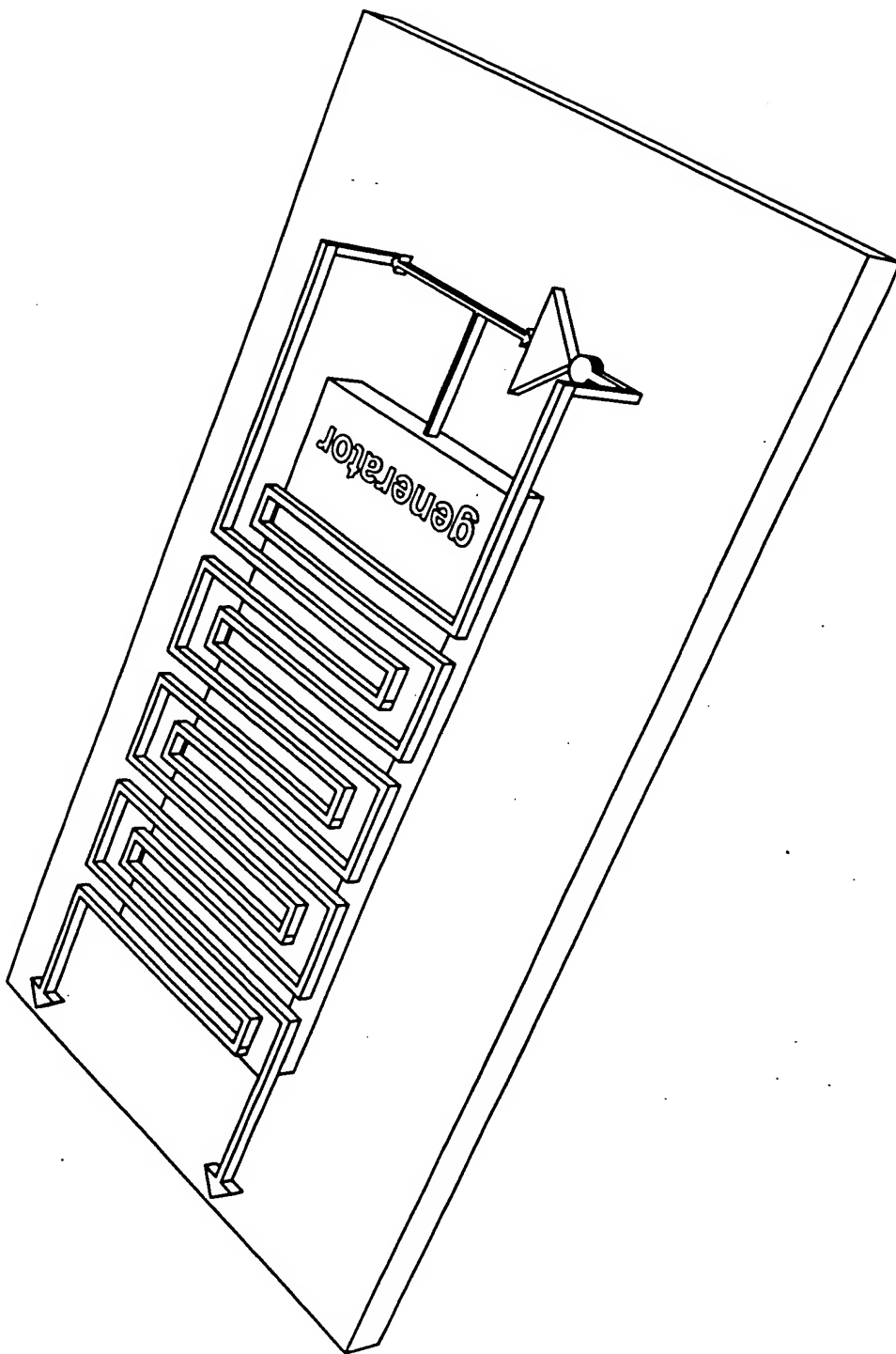


FIG. 178

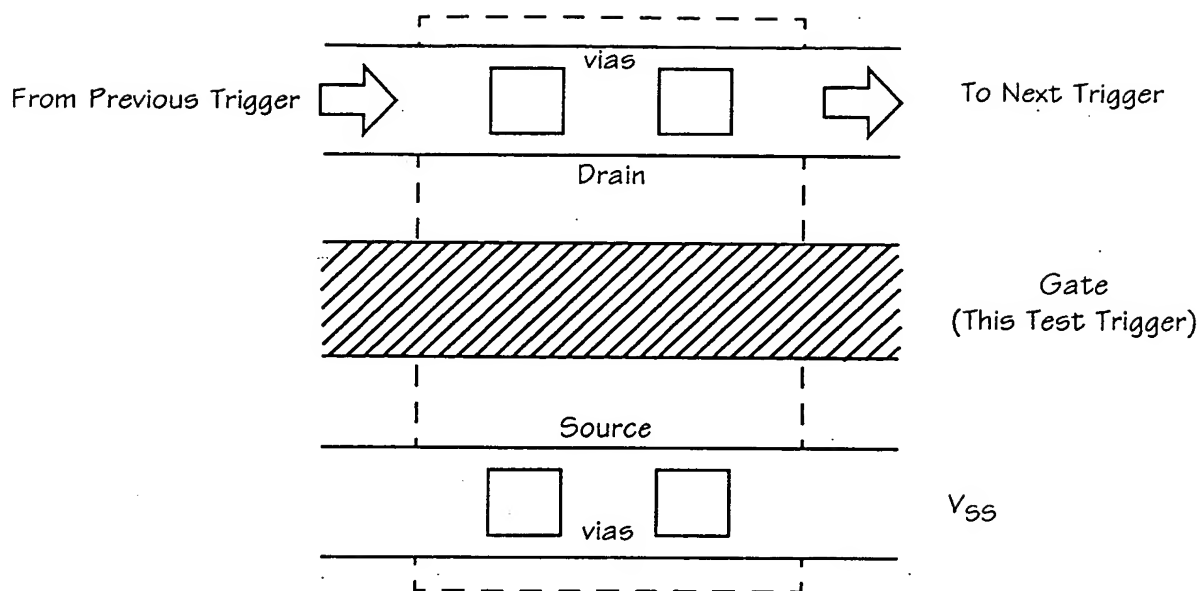


FIG. 176

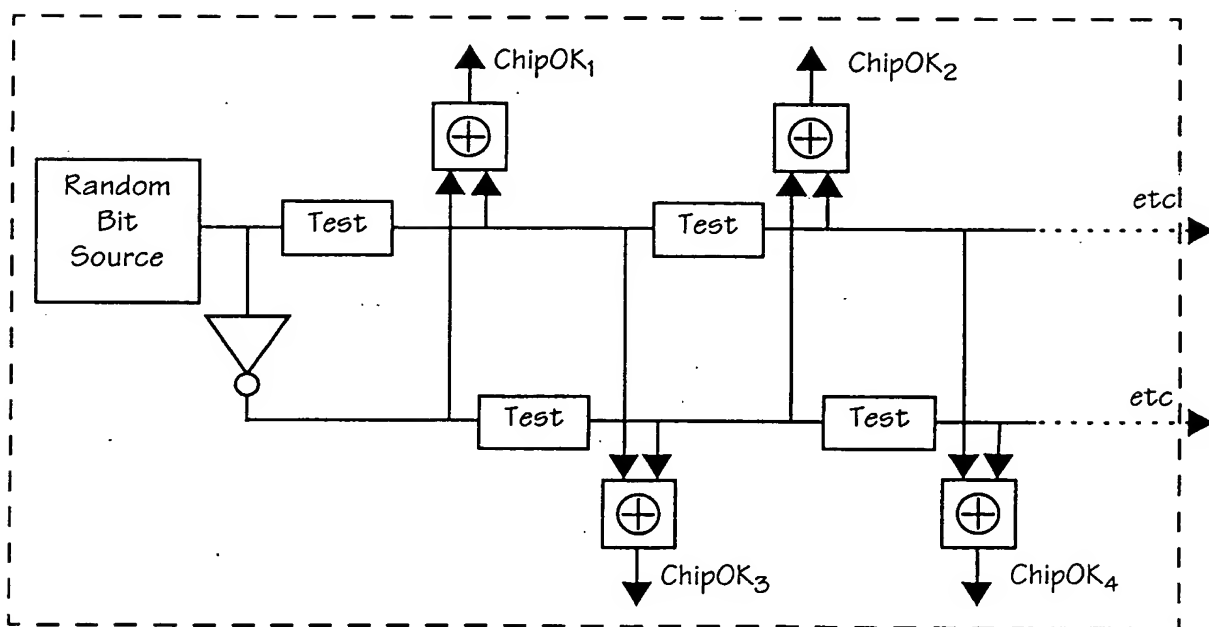
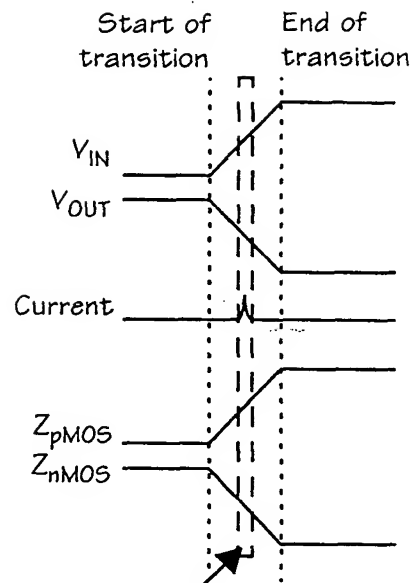
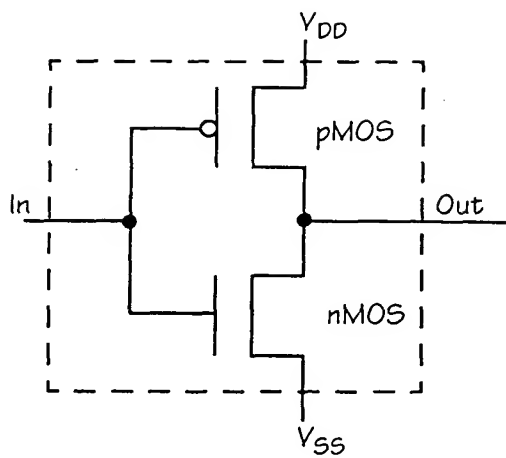
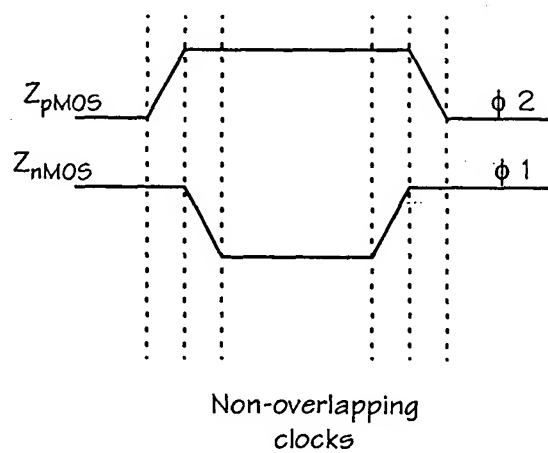
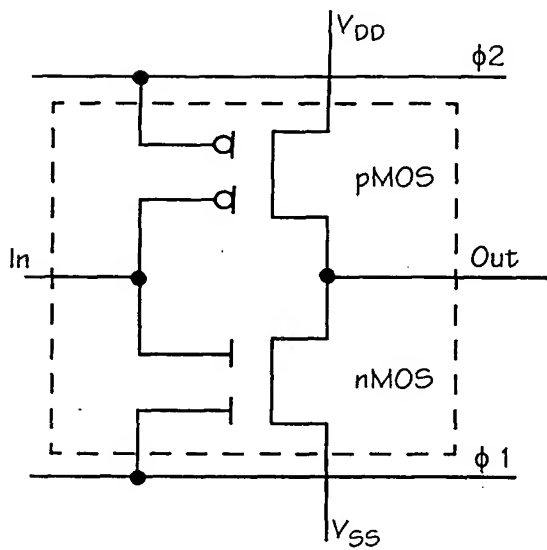


FIG. 177



Both intermediate impedance  
= power-GND short circuit

FIG. 179



Non-overlapping  
clocks

FIG. 180

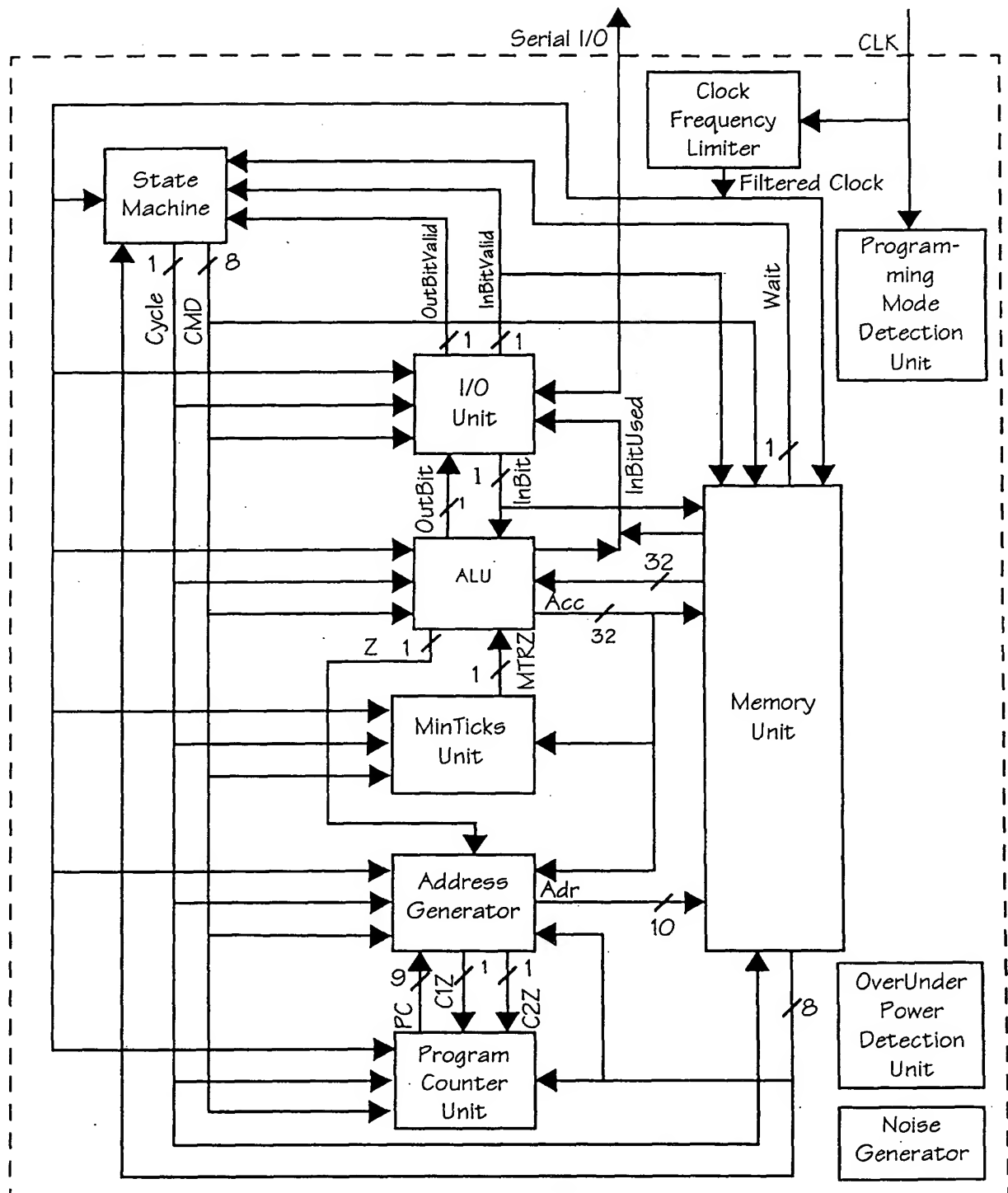


FIG. 181

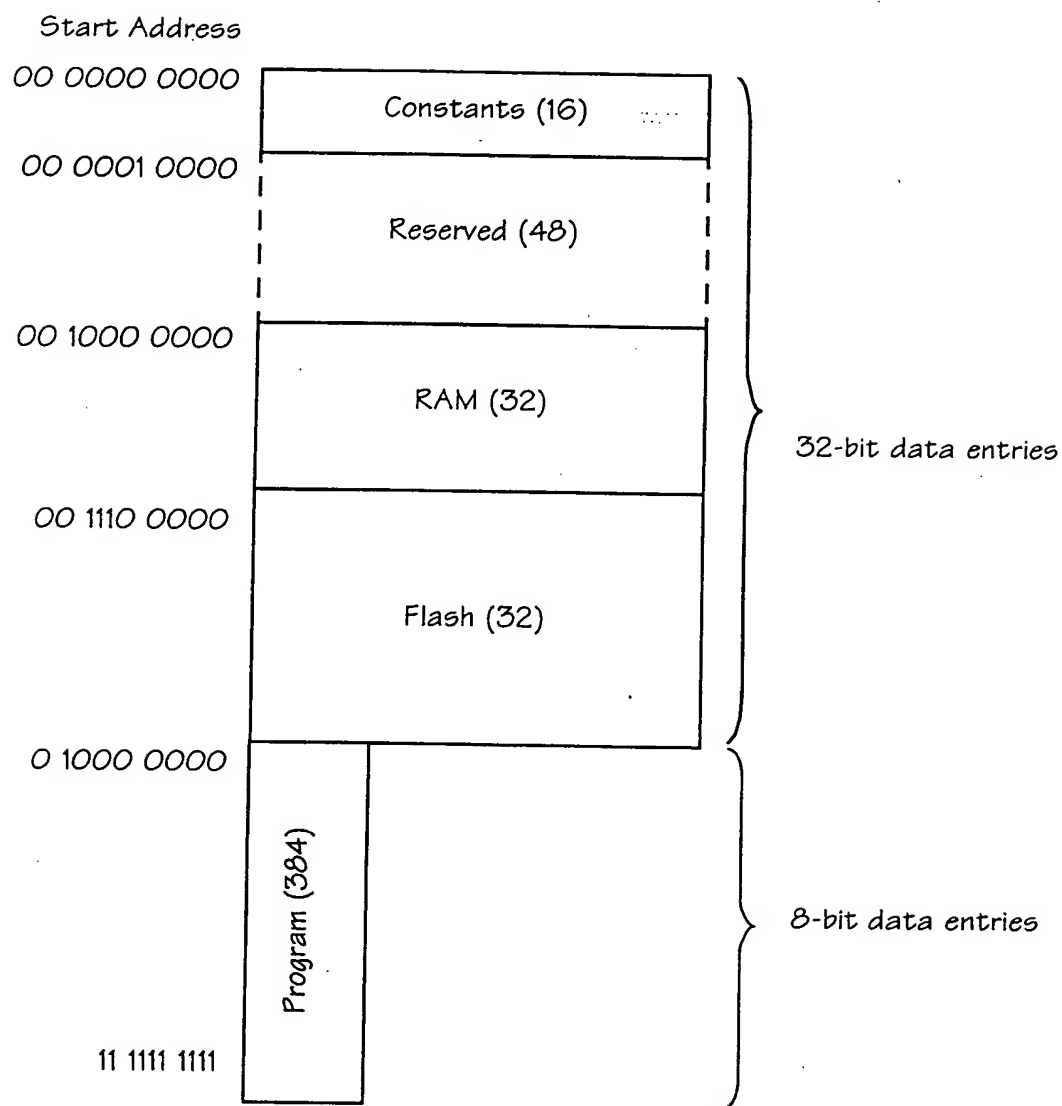


FIG. 182

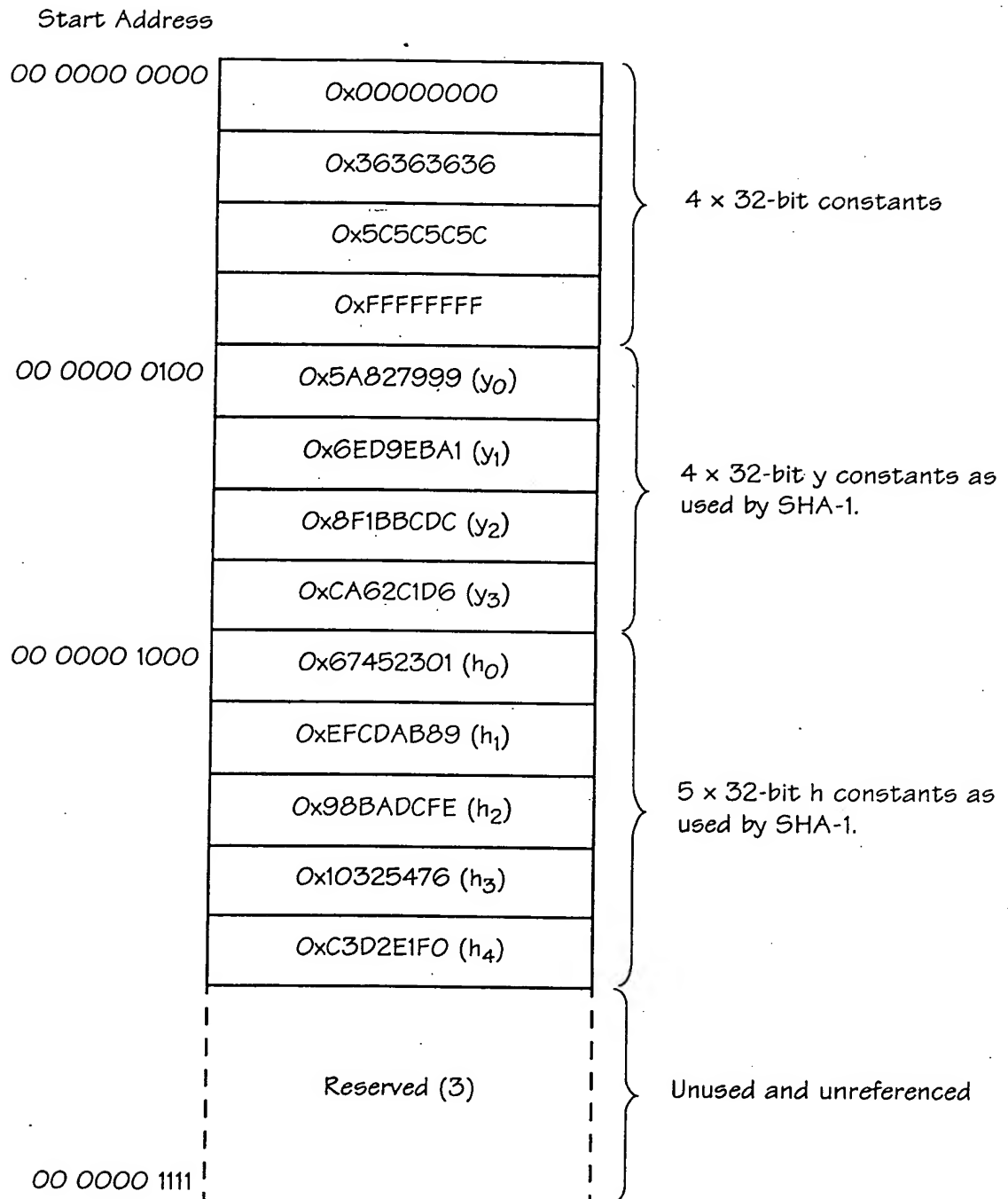


FIG. 183

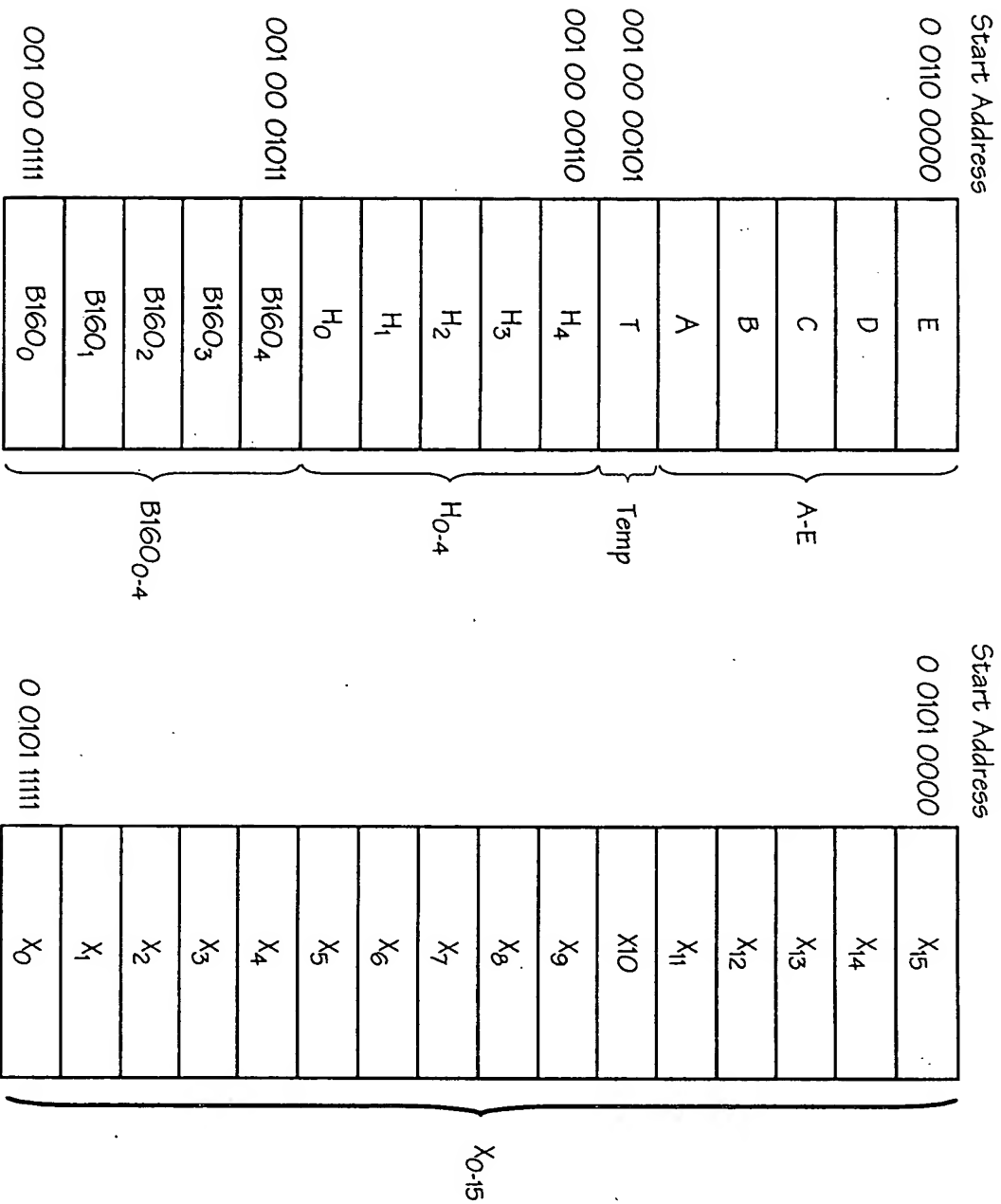


FIG. 184

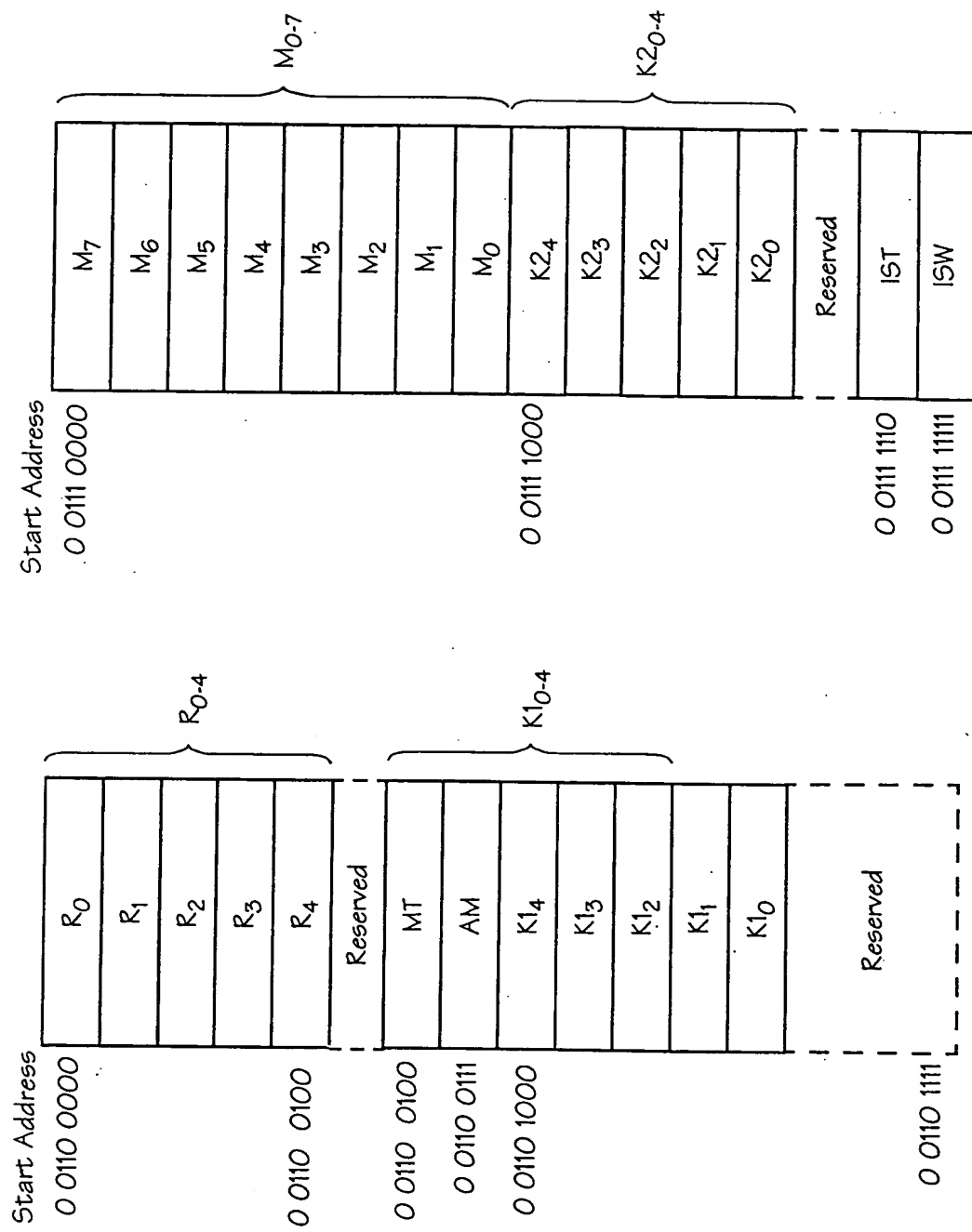


FIG. 185

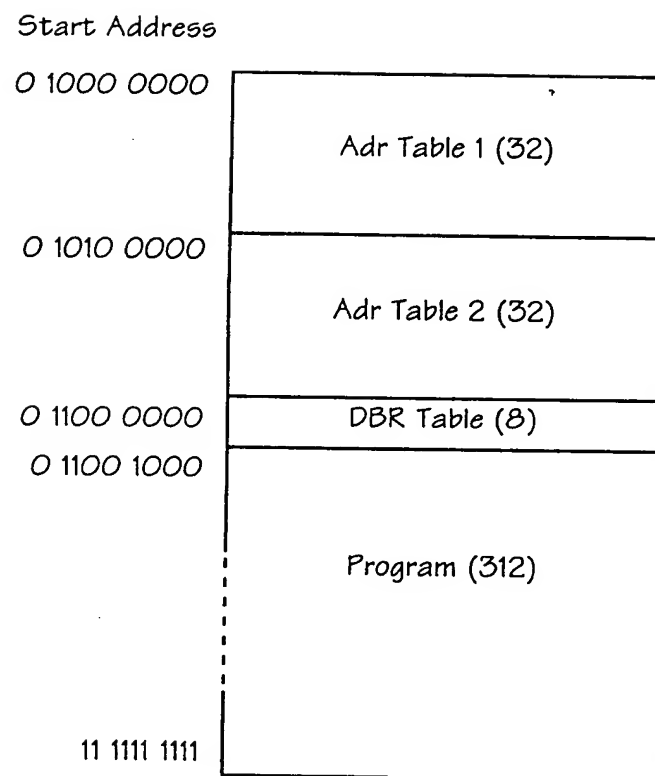


FIG. 186

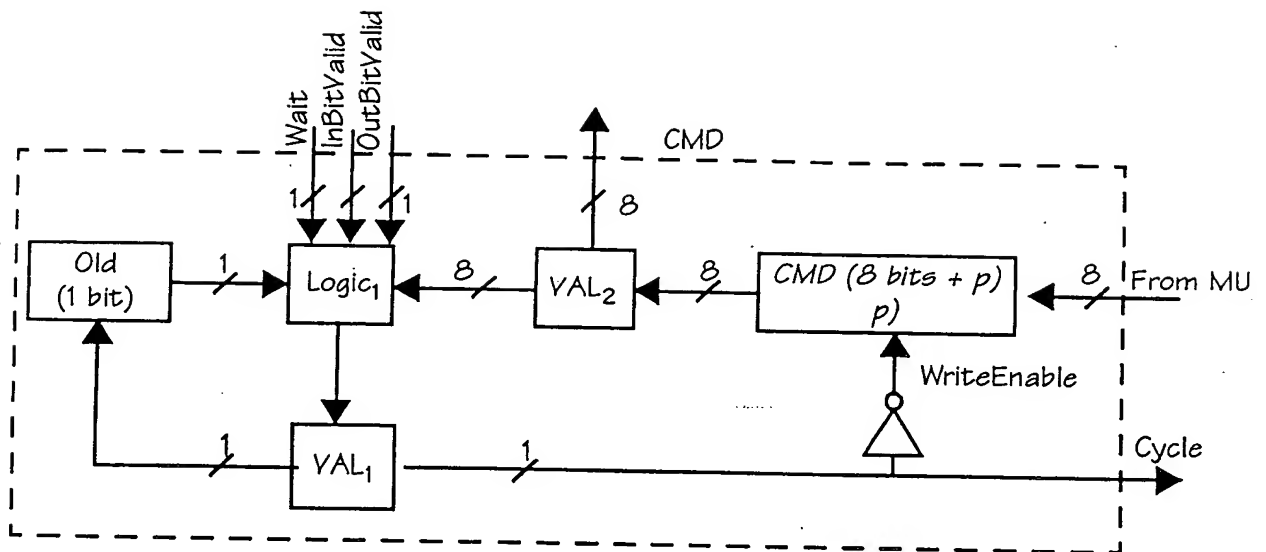


FIG. 187

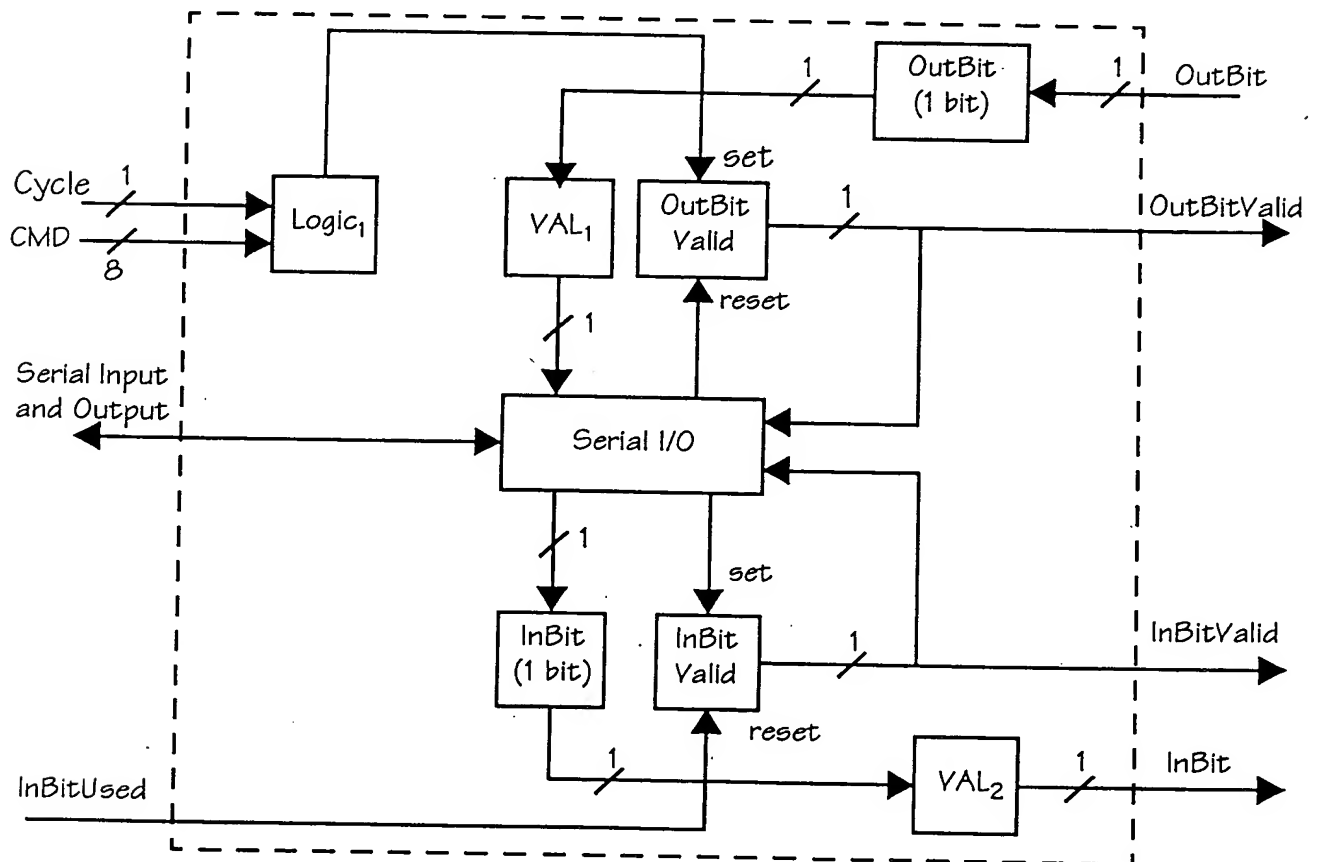


FIG. 188

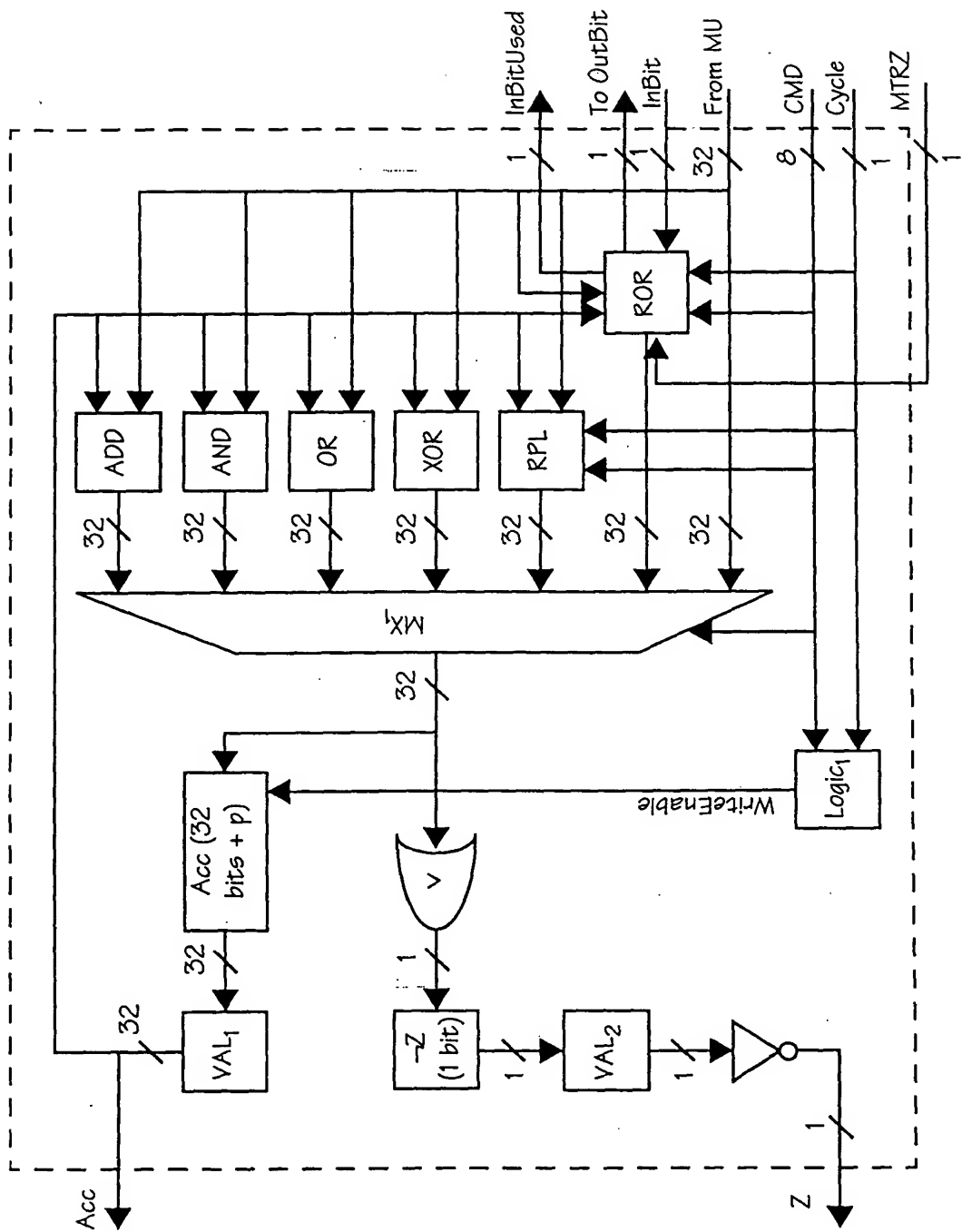


FIG. 189

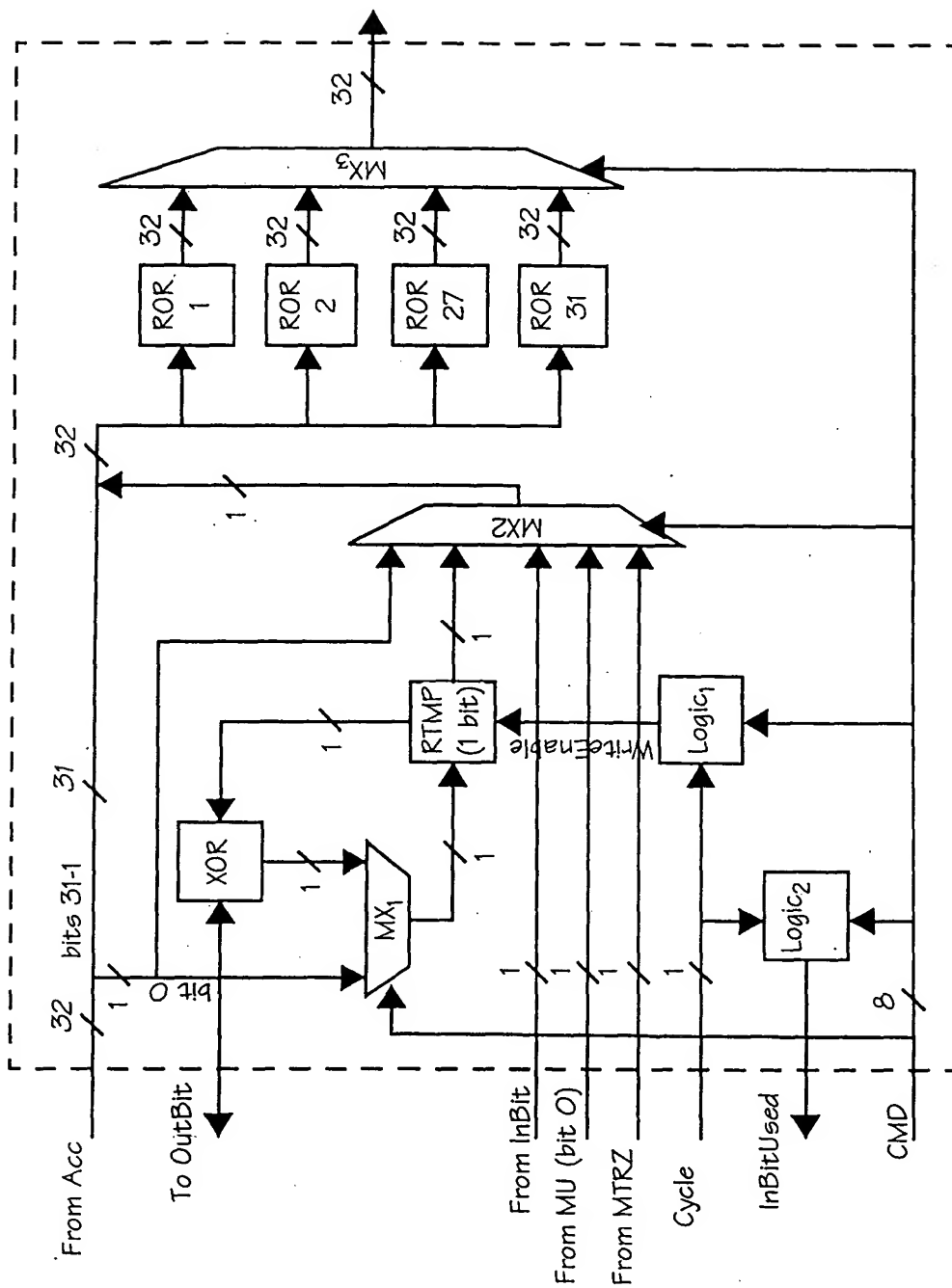


FIG. 190

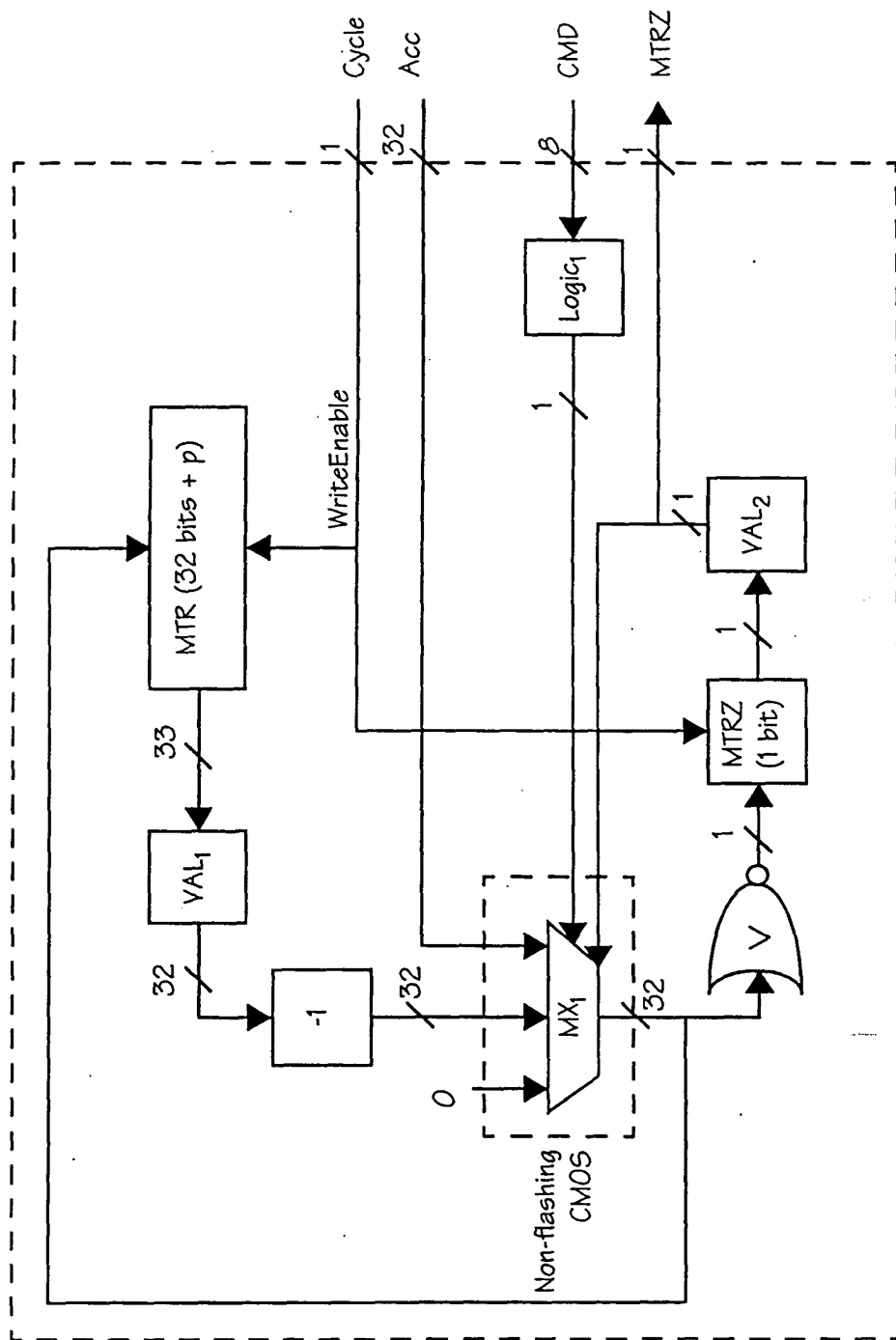


FIG. 191

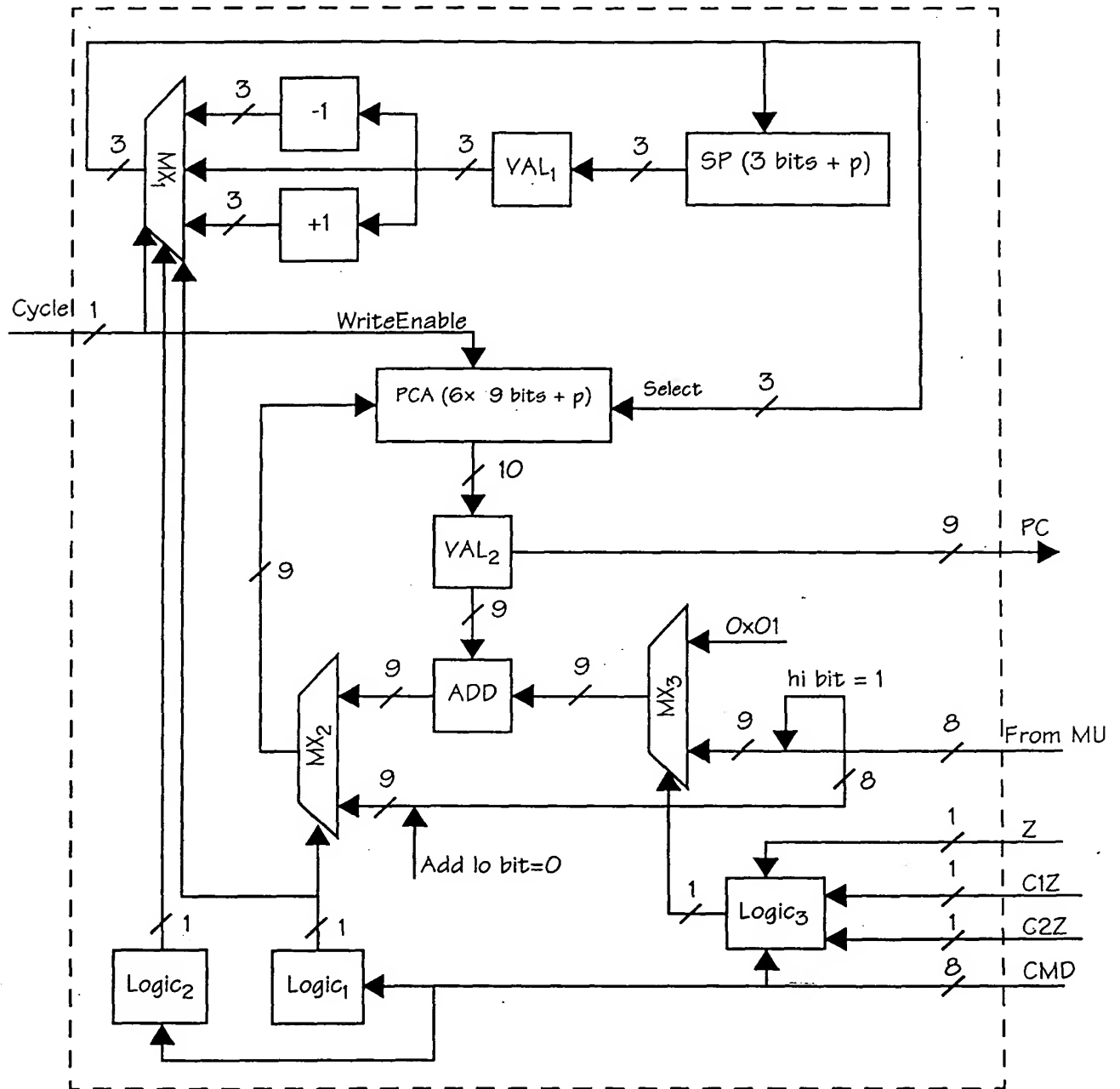


FIG. 192

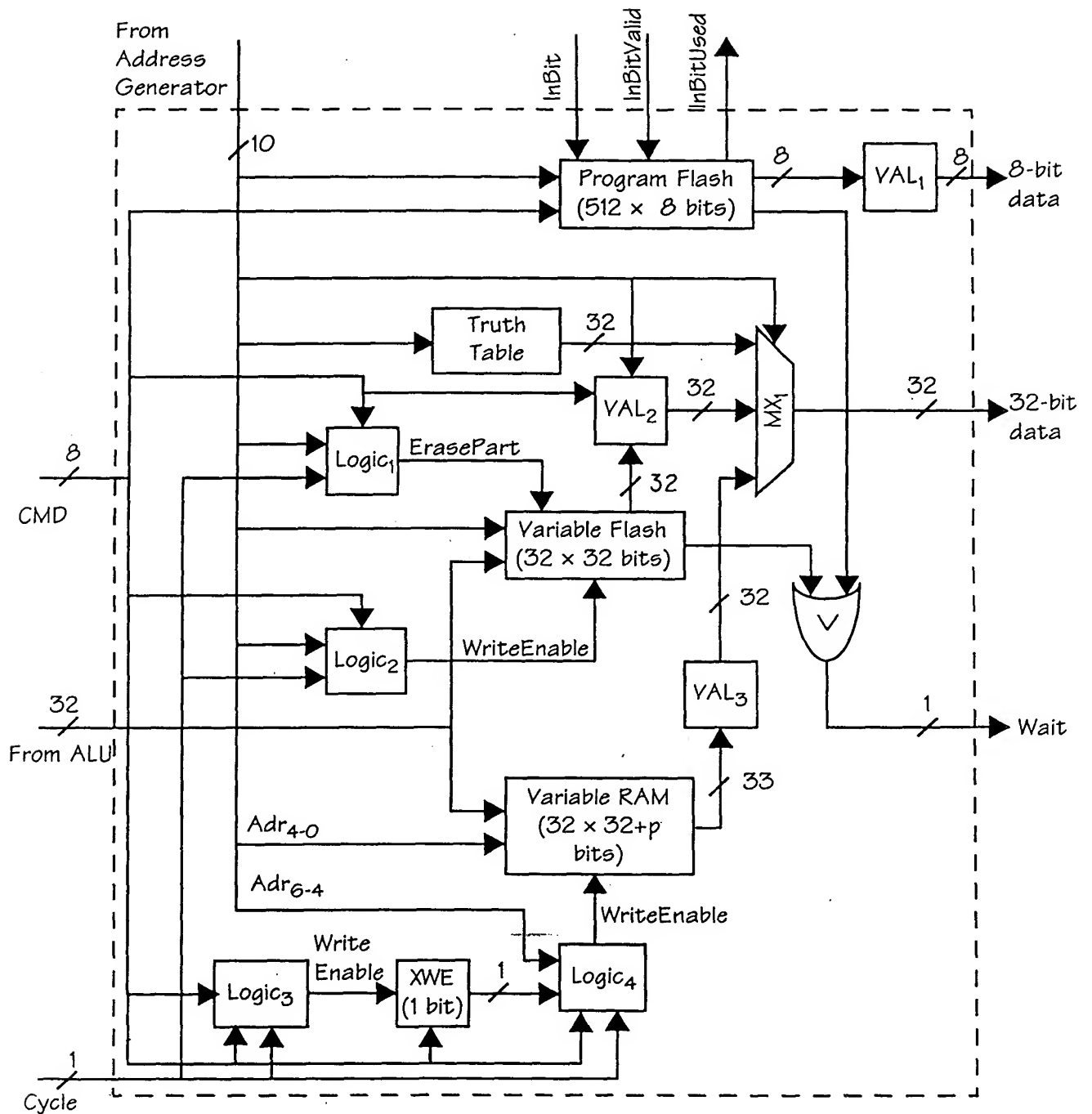


FIG. 193

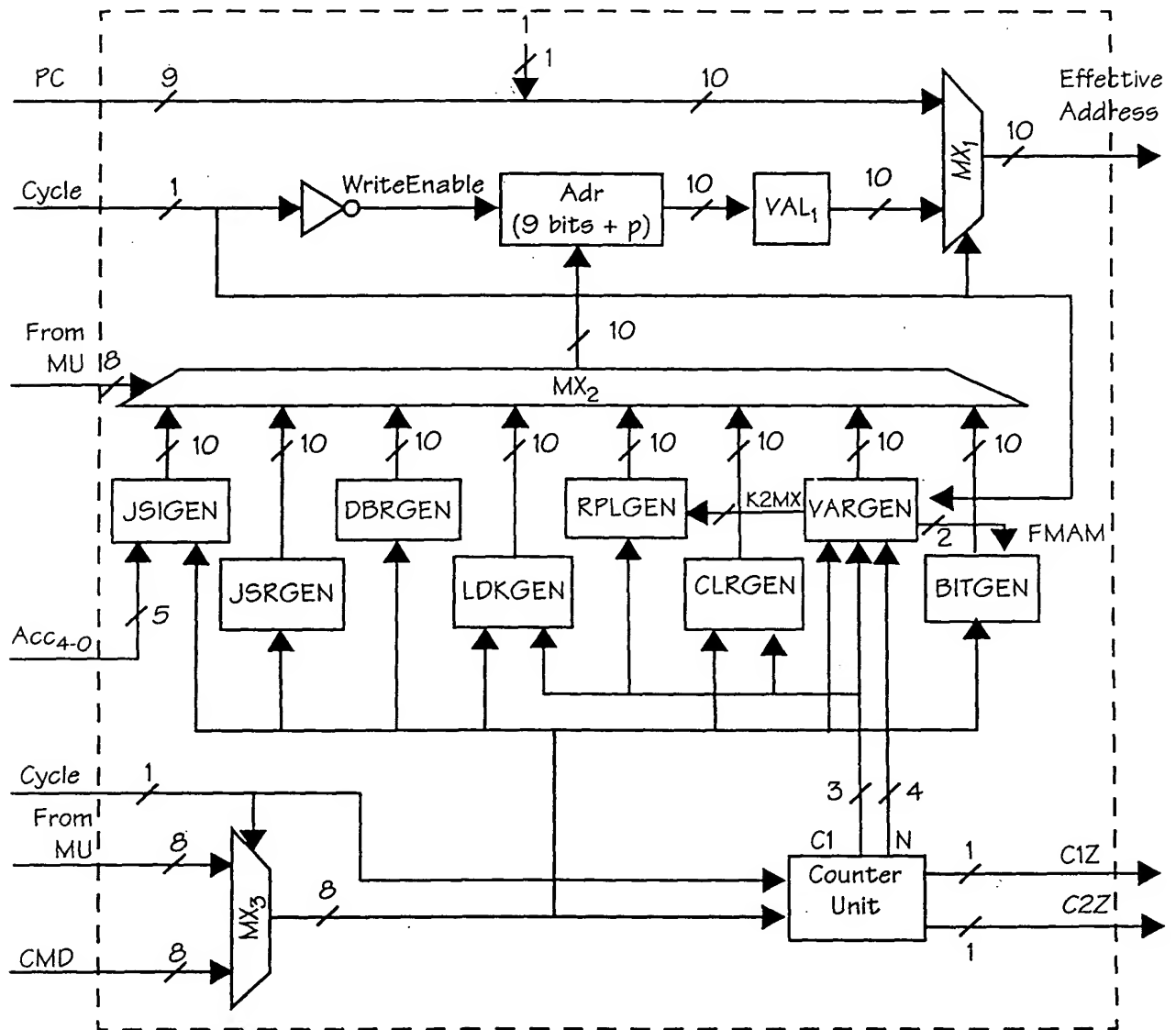


FIG. 194

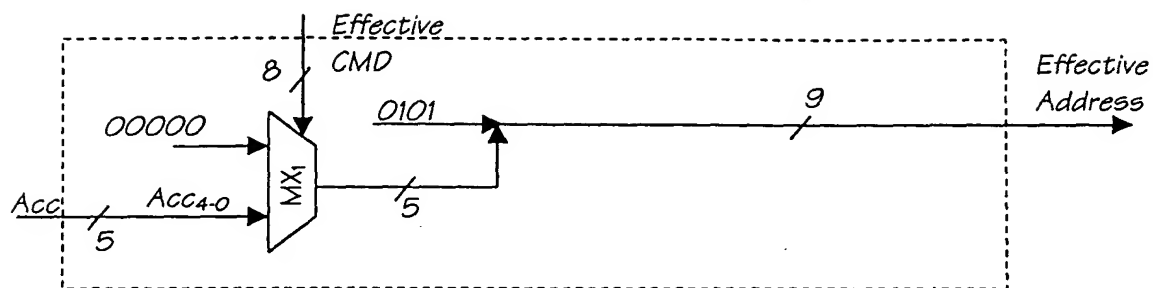


FIG. 195

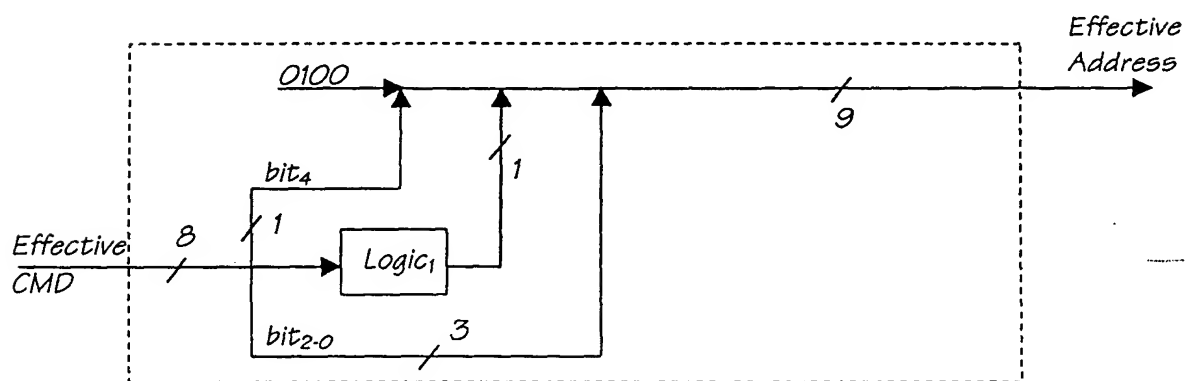


FIG. 196

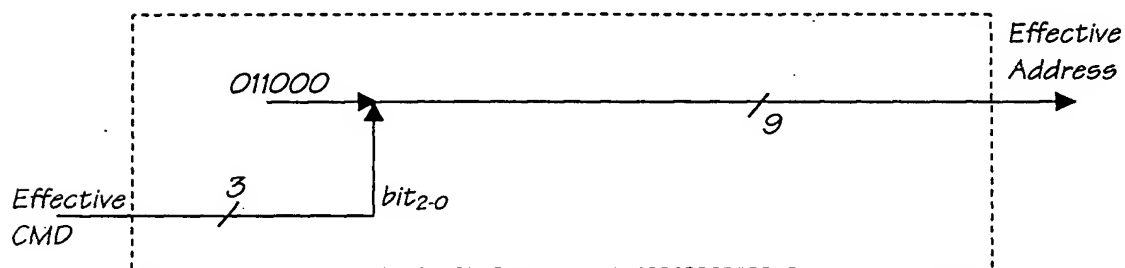


FIG. 197

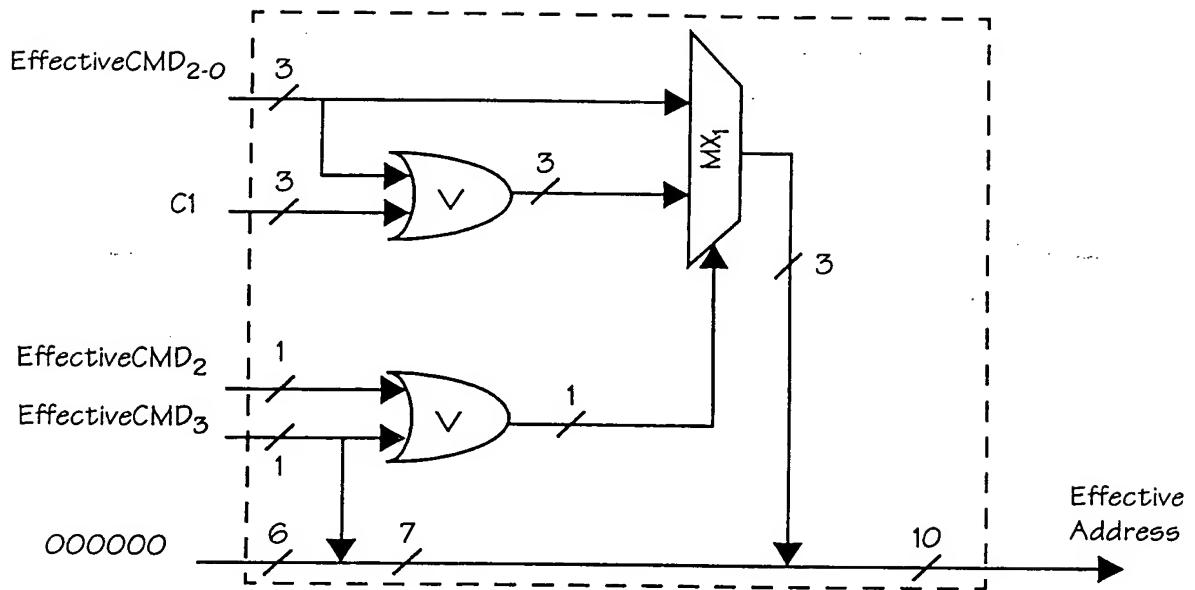


FIG. 198

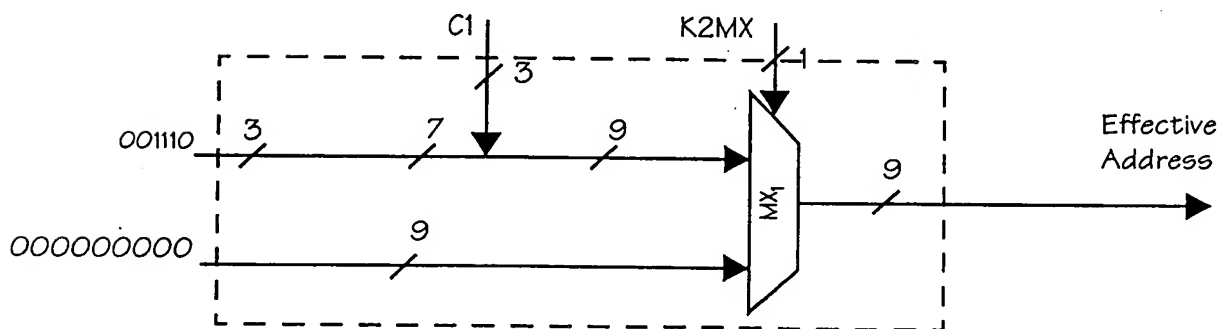


FIG. 199

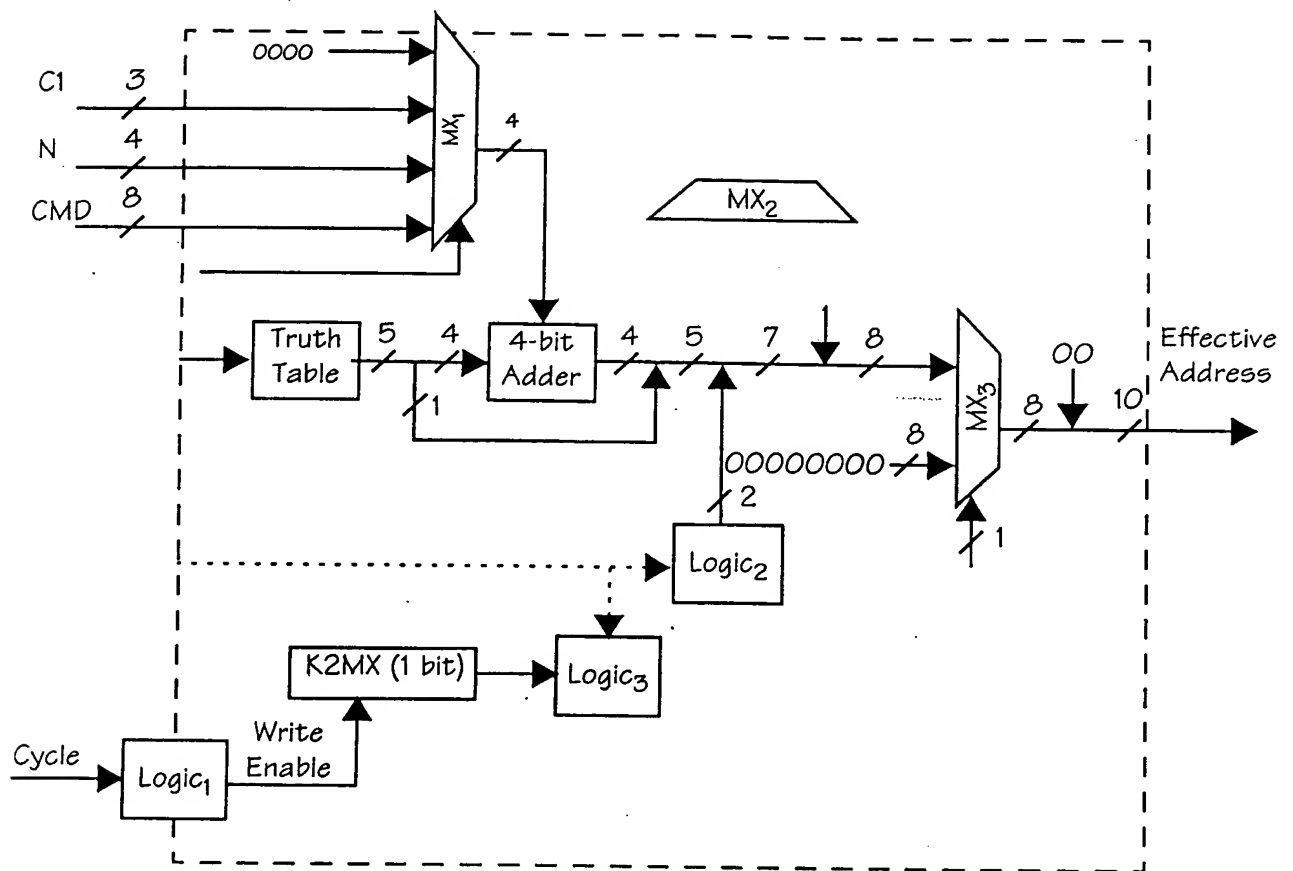


FIG. 200

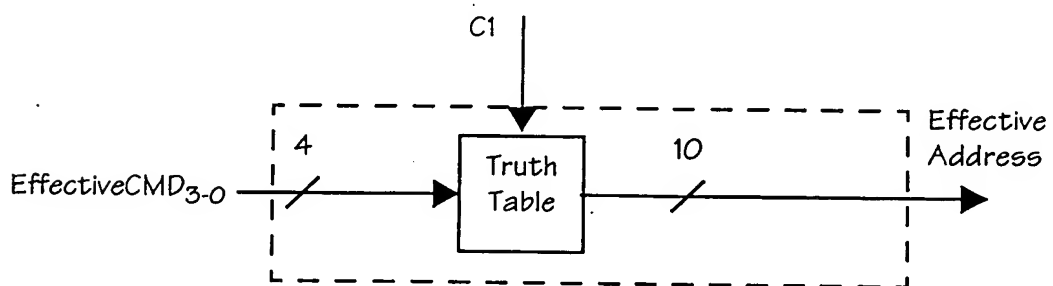


FIG. 201

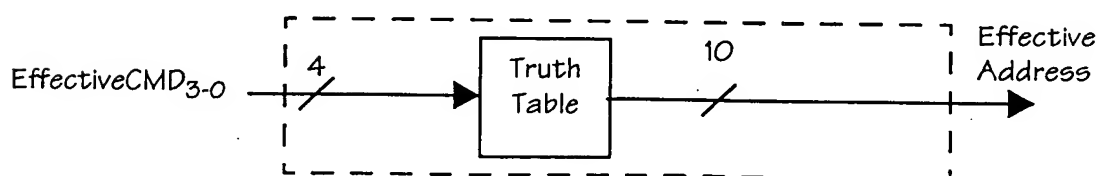


FIG. 202

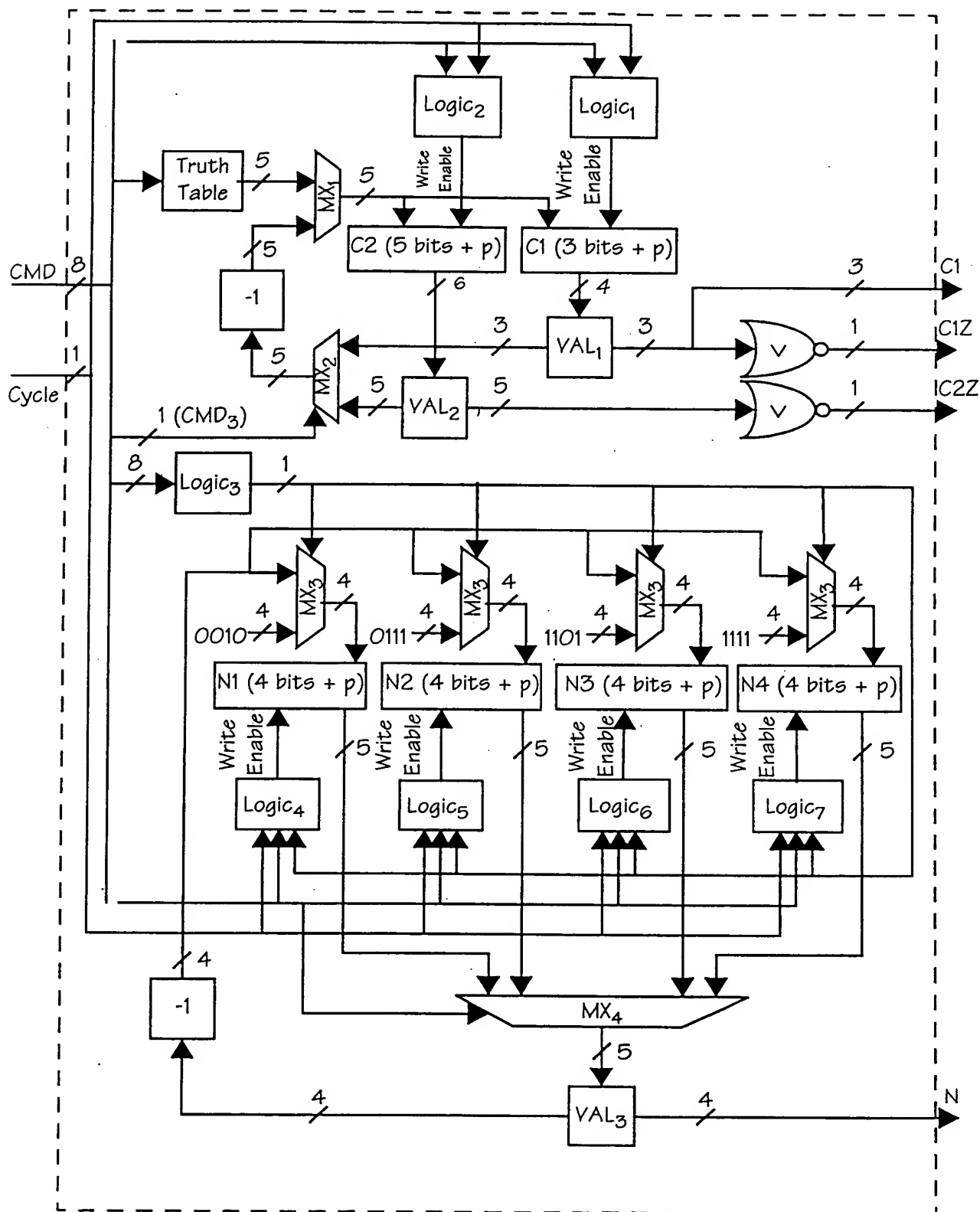


FIG. 203

705

DATA TYPE	BITS
Factory Code	16
Batch Number	32
Serial Number	48
Manufacturing Date	16
Media Length	24
Media Type	8
Preprinted Media Length	16
Cyan Ink Viscosity	8
Magenta Ink Viscosity	8
Yellow Ink Viscosity	8
Cyan Drop Volume	8
Magenta Drop Volume	8
Yellow Drop Volume	8
Cyan Ink Color	24
Magenta Ink Color	24
Yellow Ink Color	24
Remaining-media Length Indicator	16
Authentication Key	128
Copyrightable bit pattern	512
Reserved for Camera Use	88
TOTAL	1024

728

FIG. 204

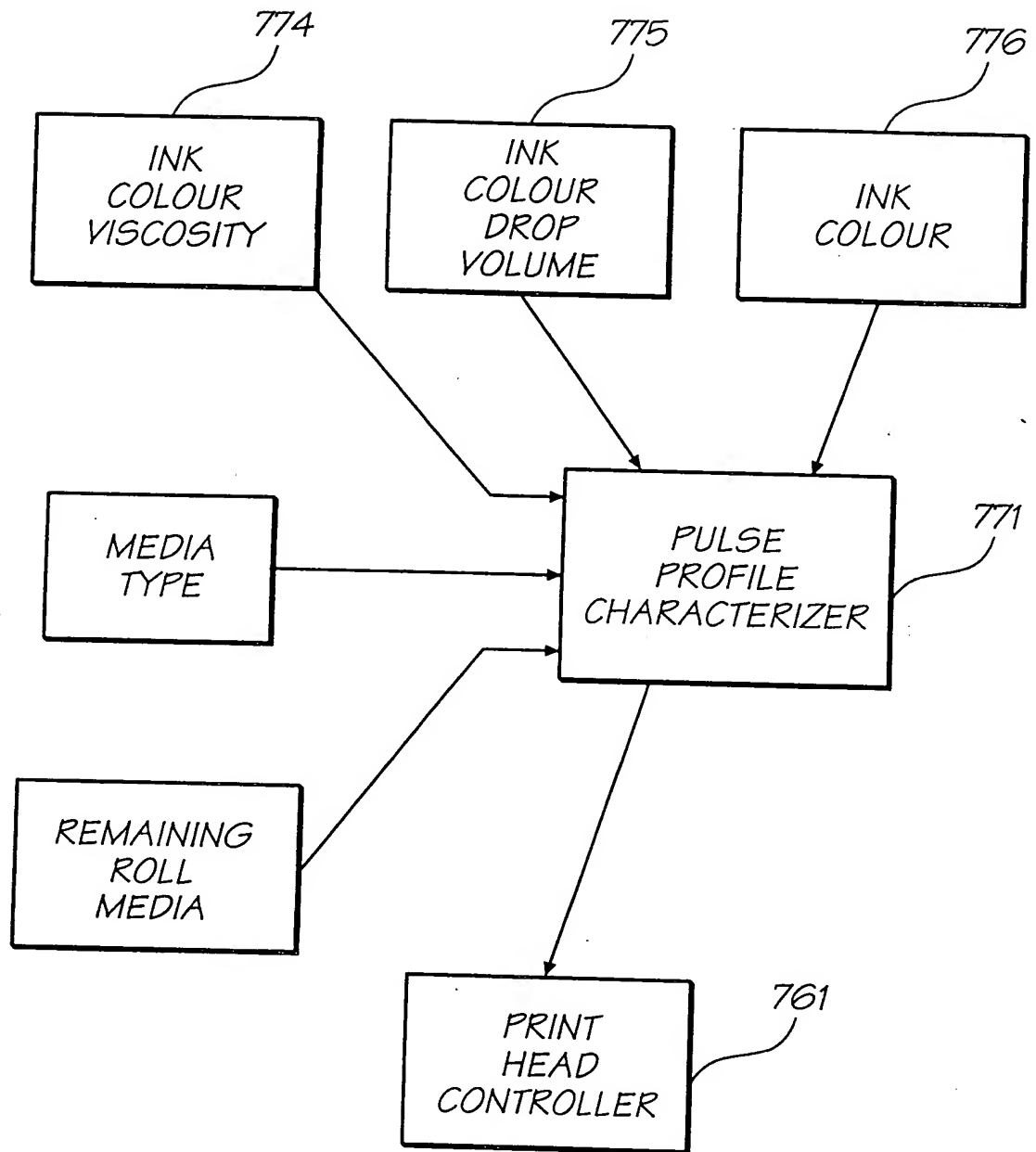


FIG. 205

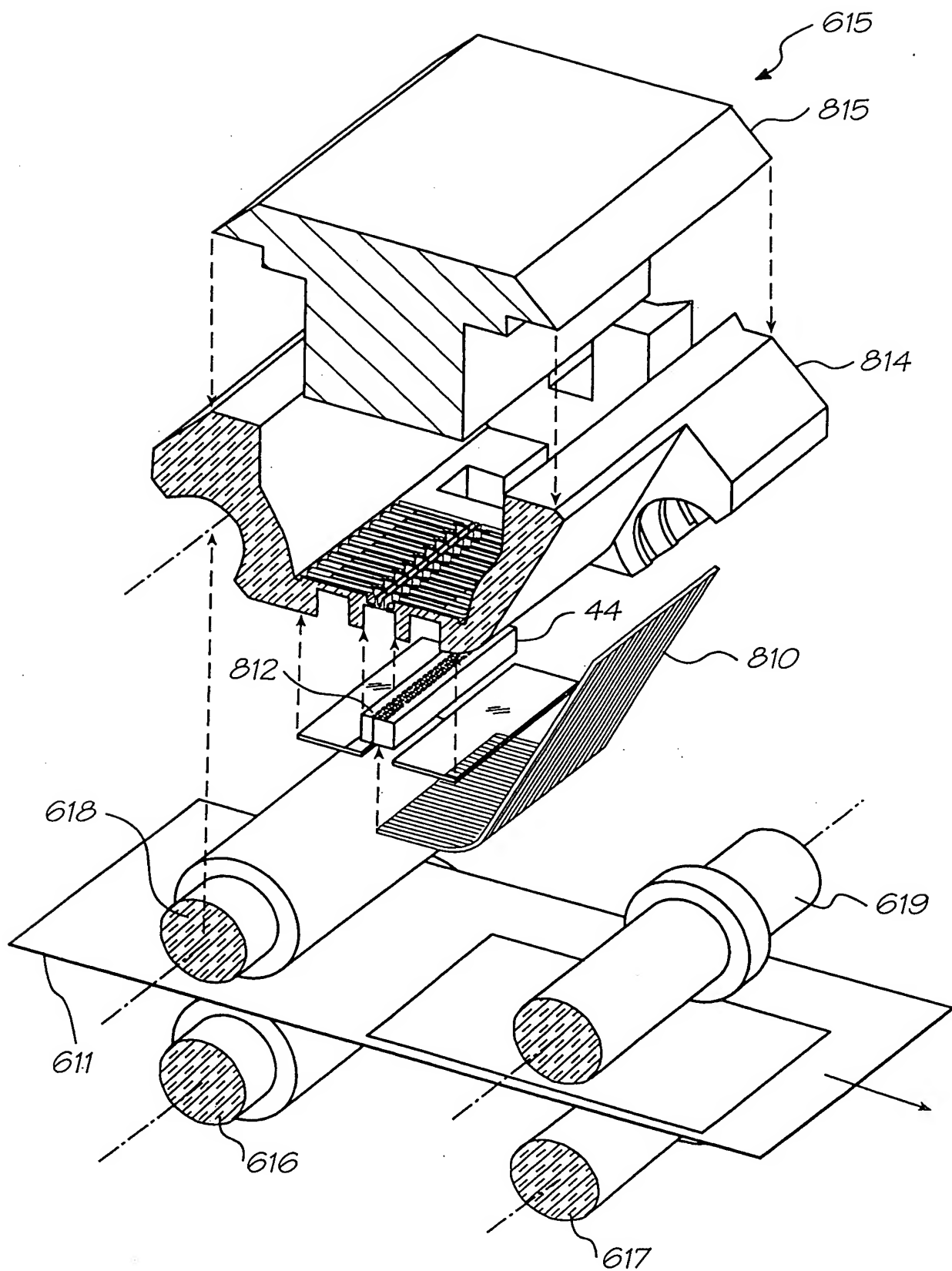


FIG. 206



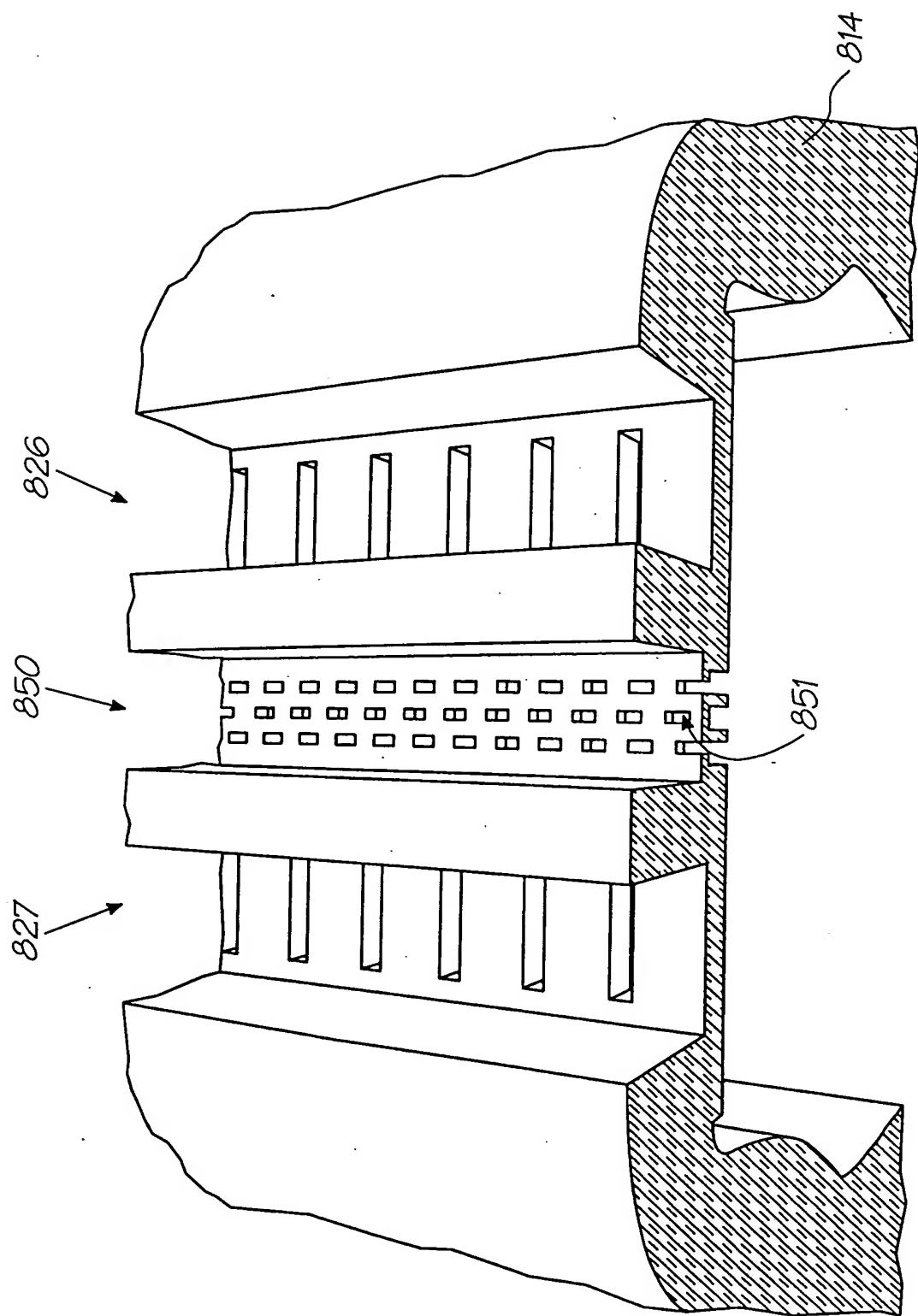
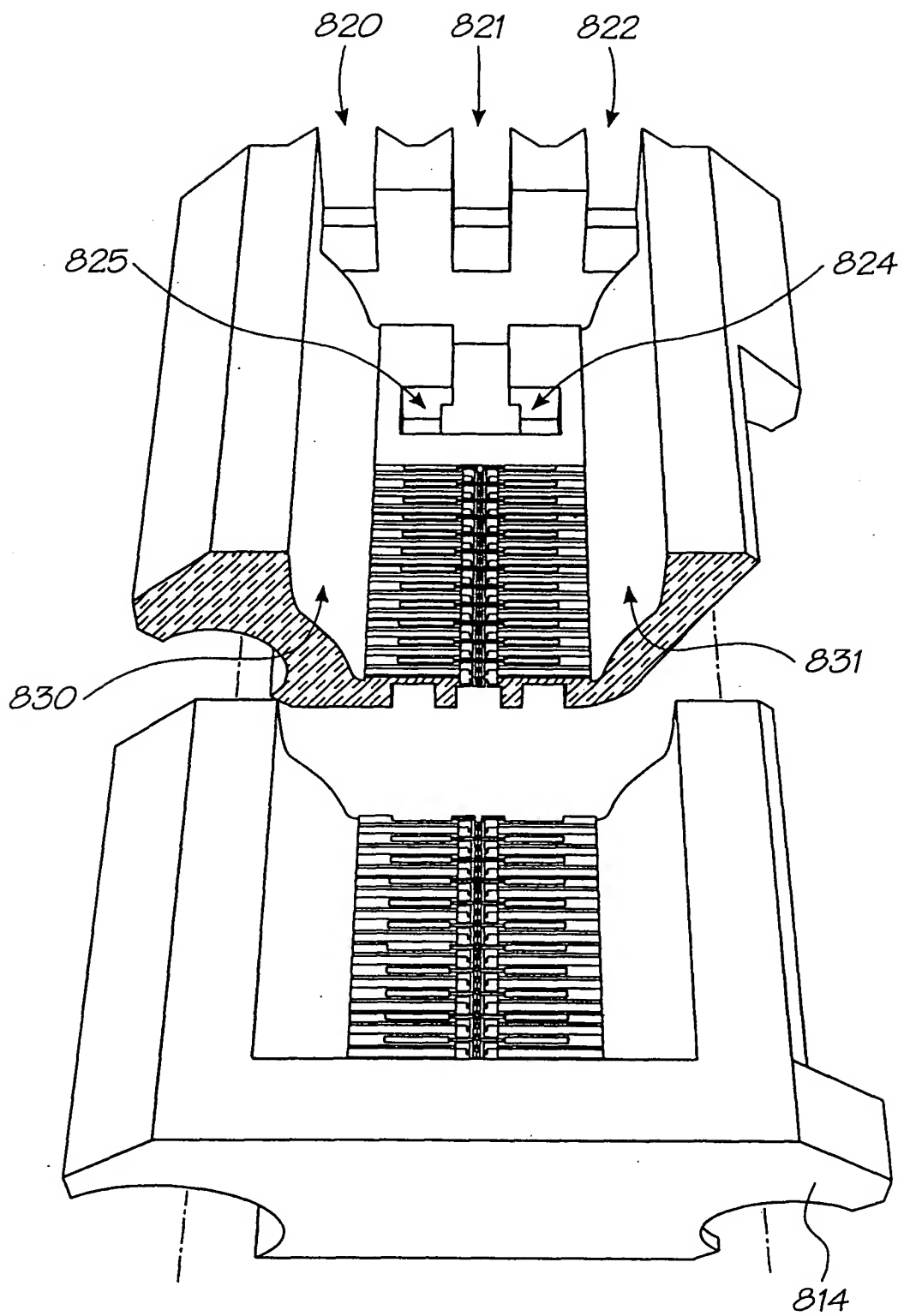


FIG. 208



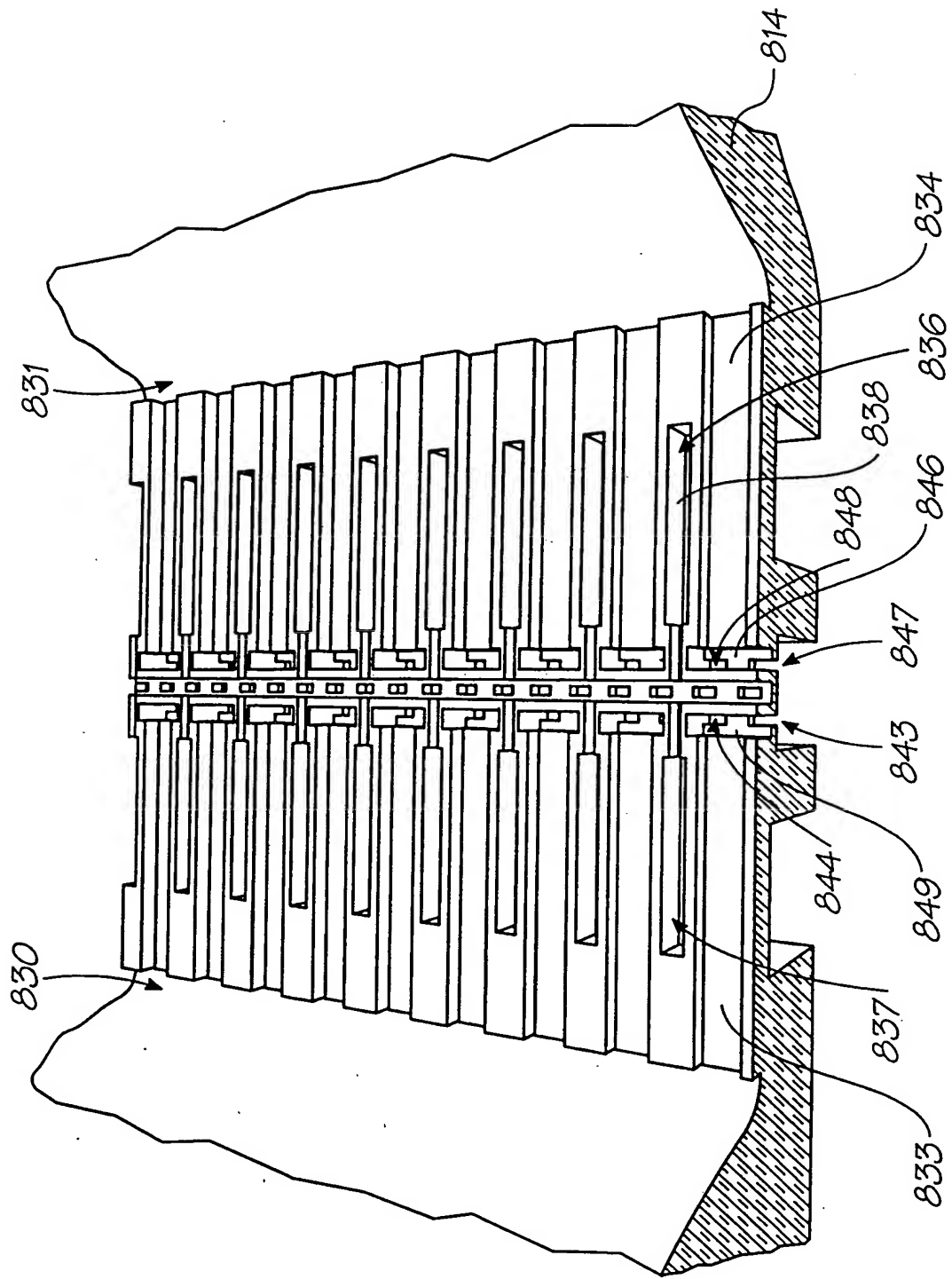


FIG. 210

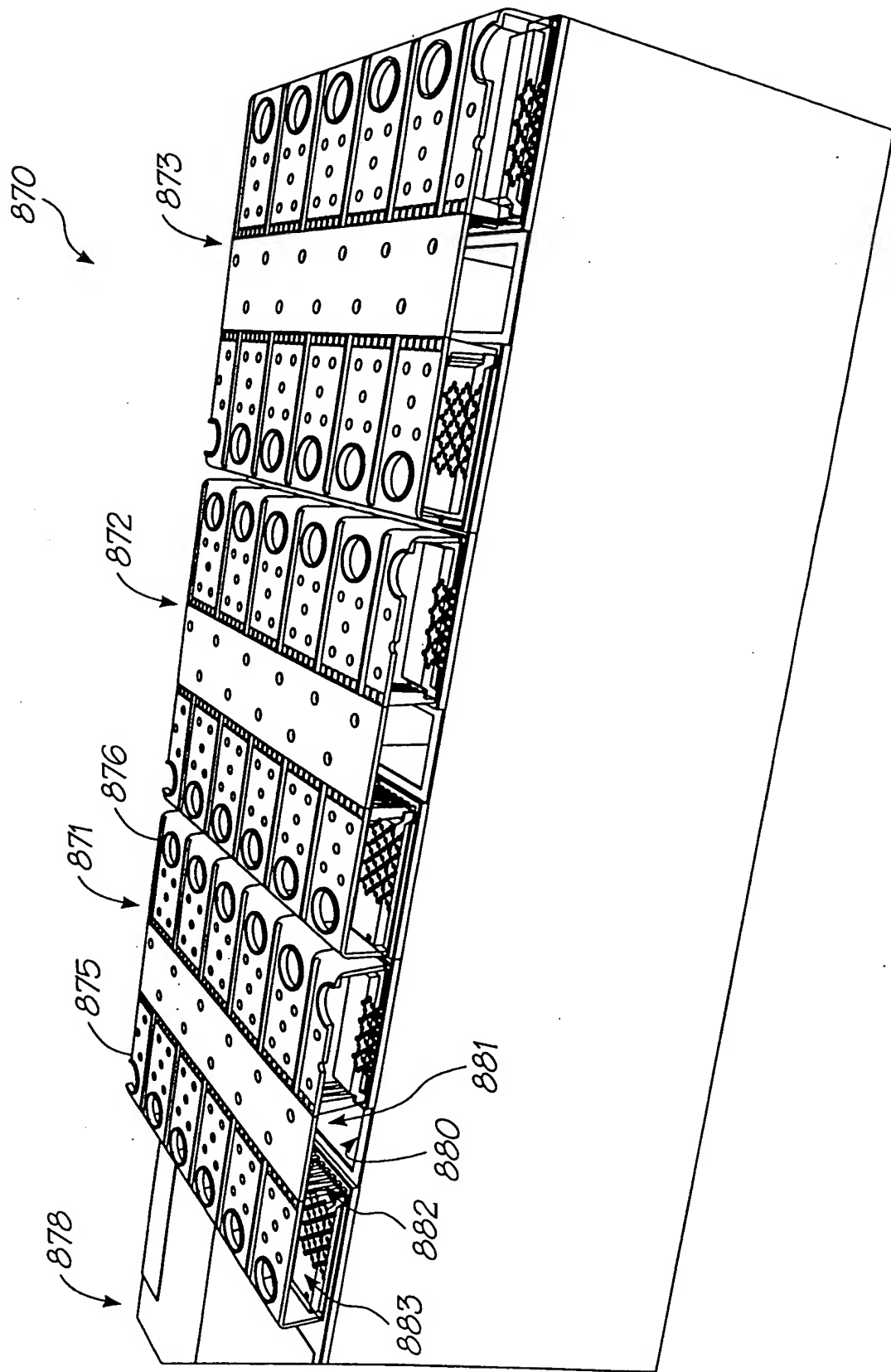
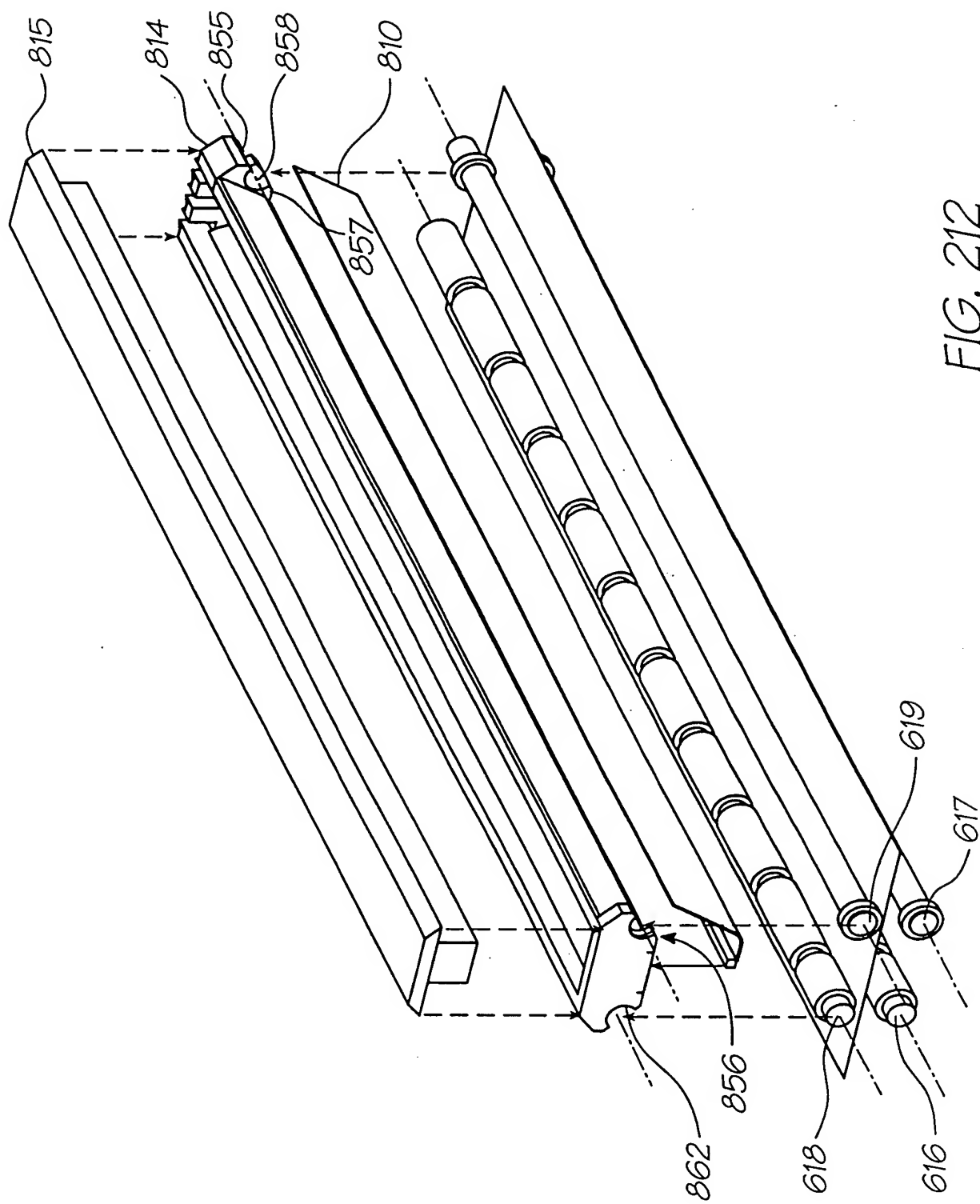


FIG. 211



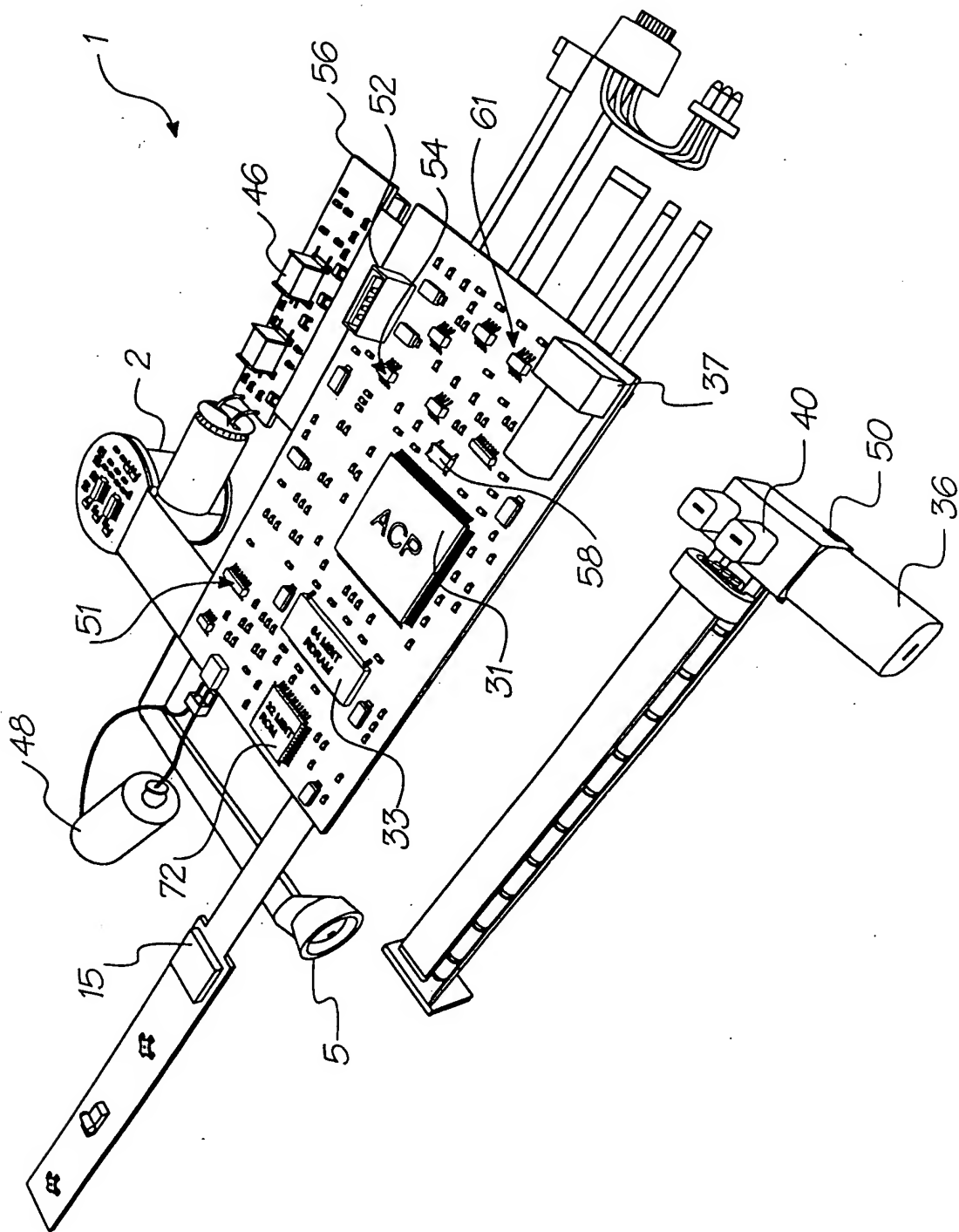


FIG. 213

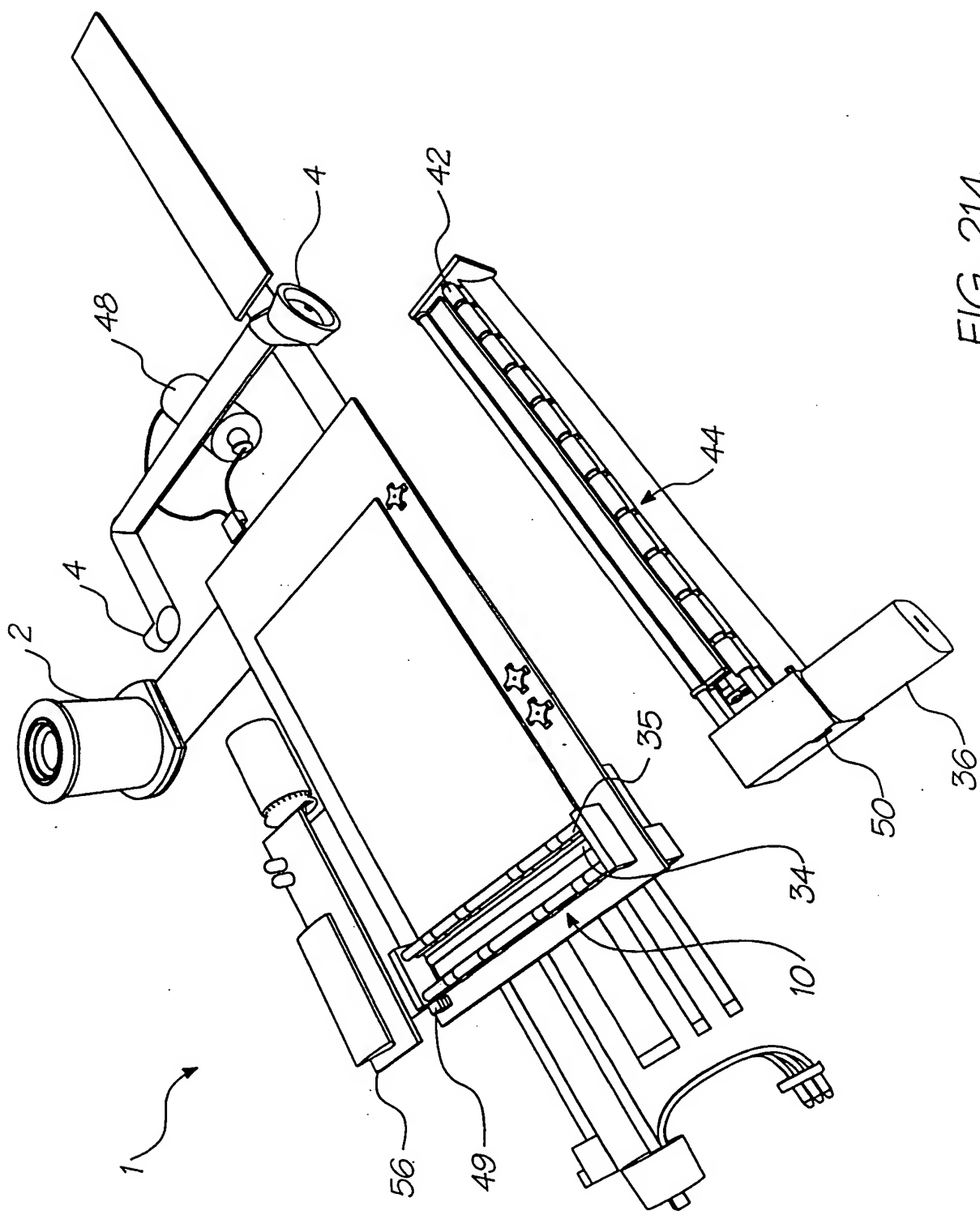


FIG. 214

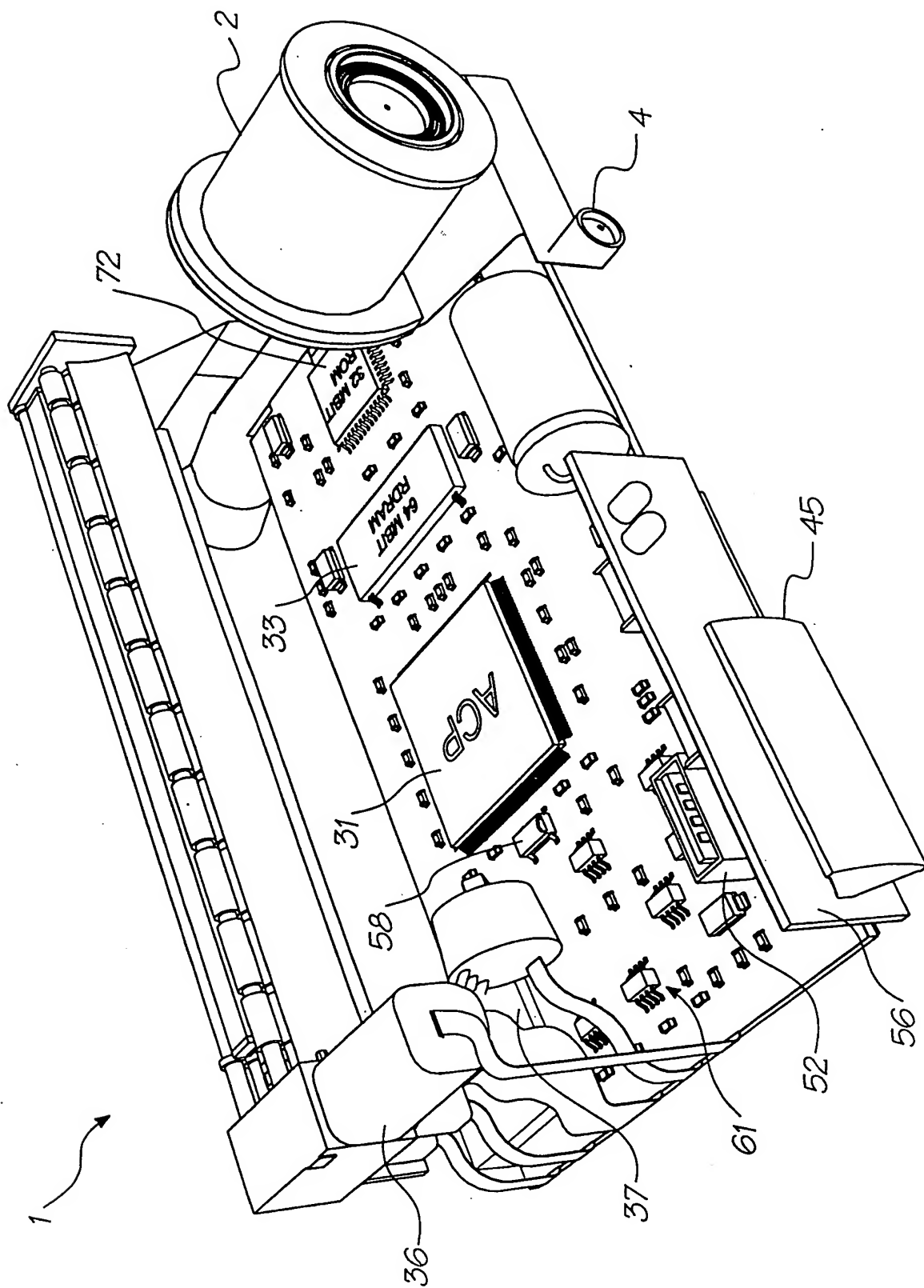


FIG. 215

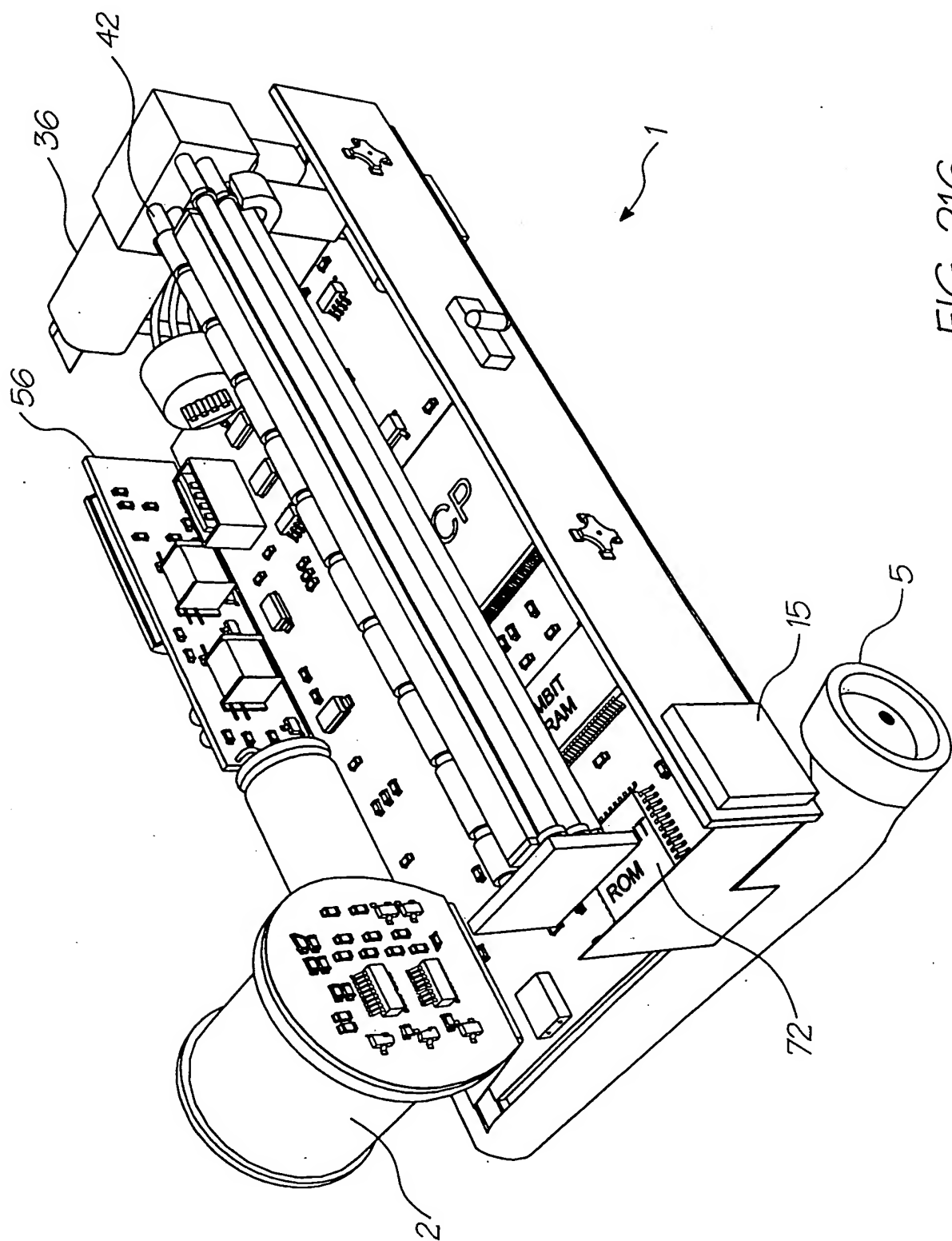


FIG. 216

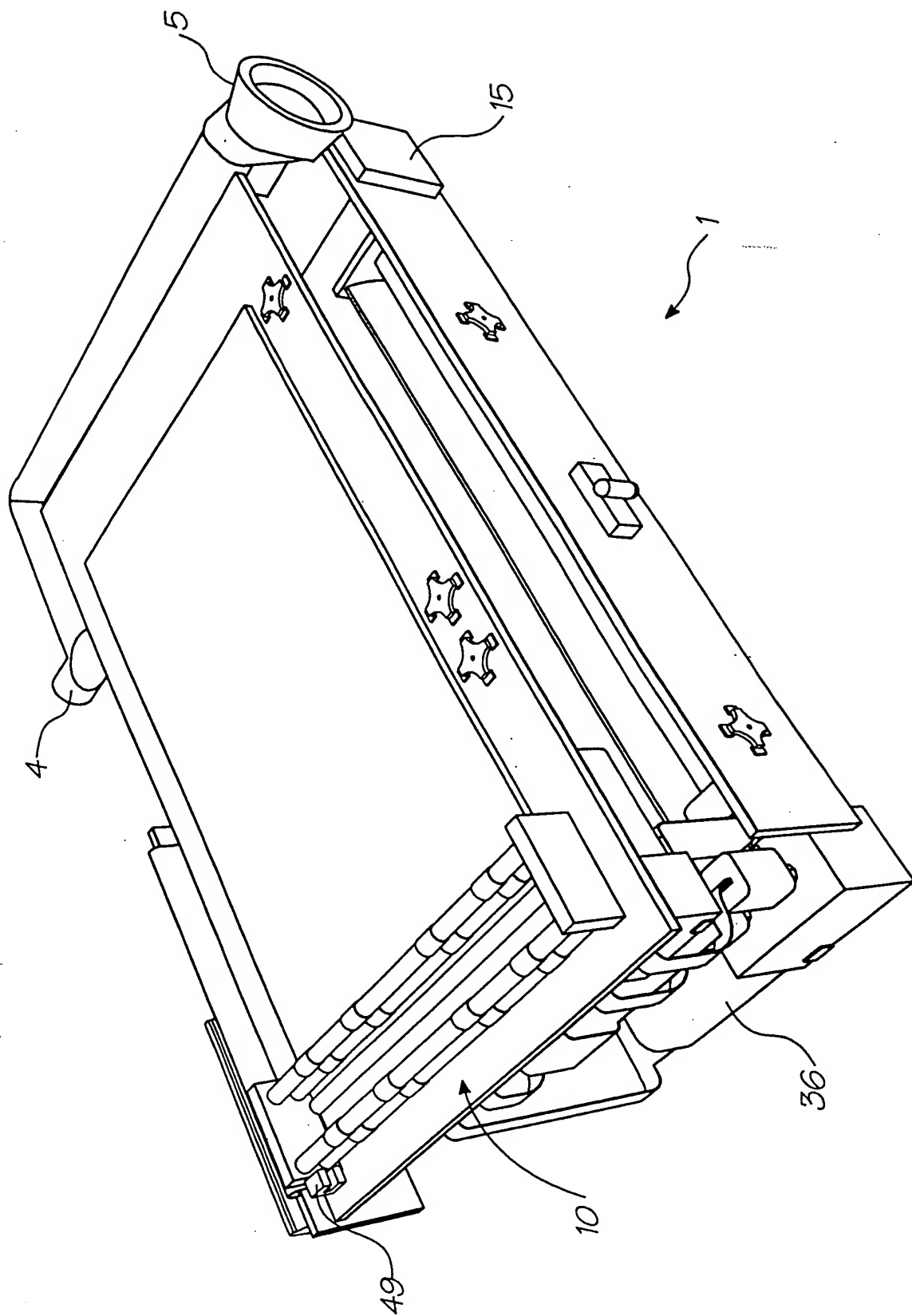


FIG. 217

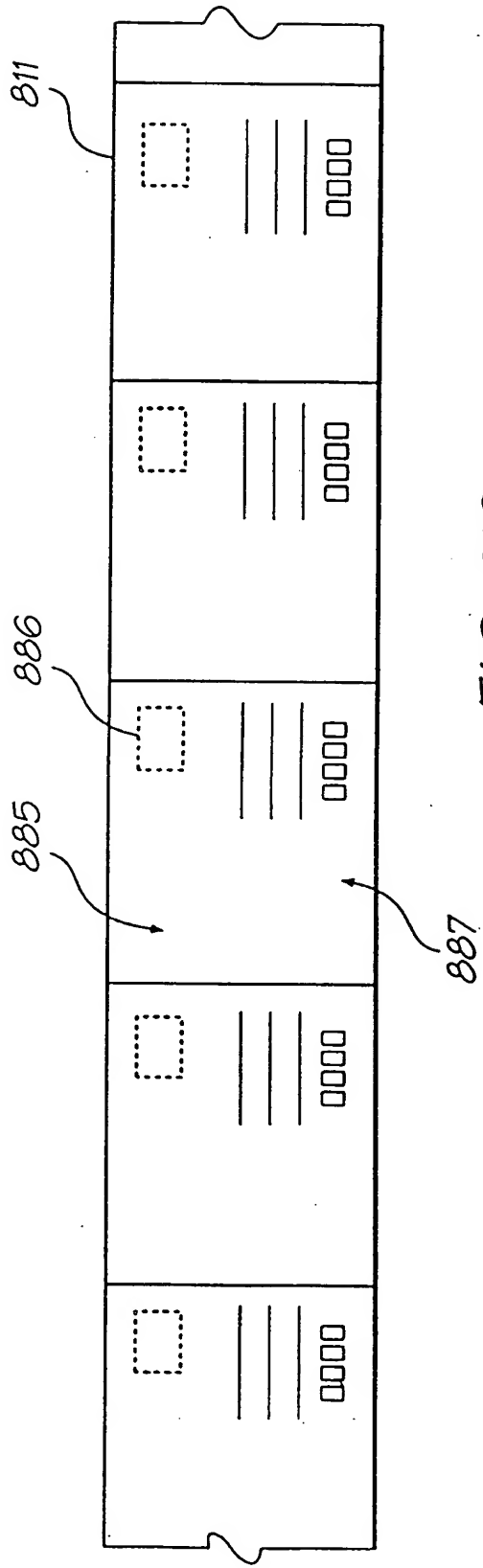


FIG. 218

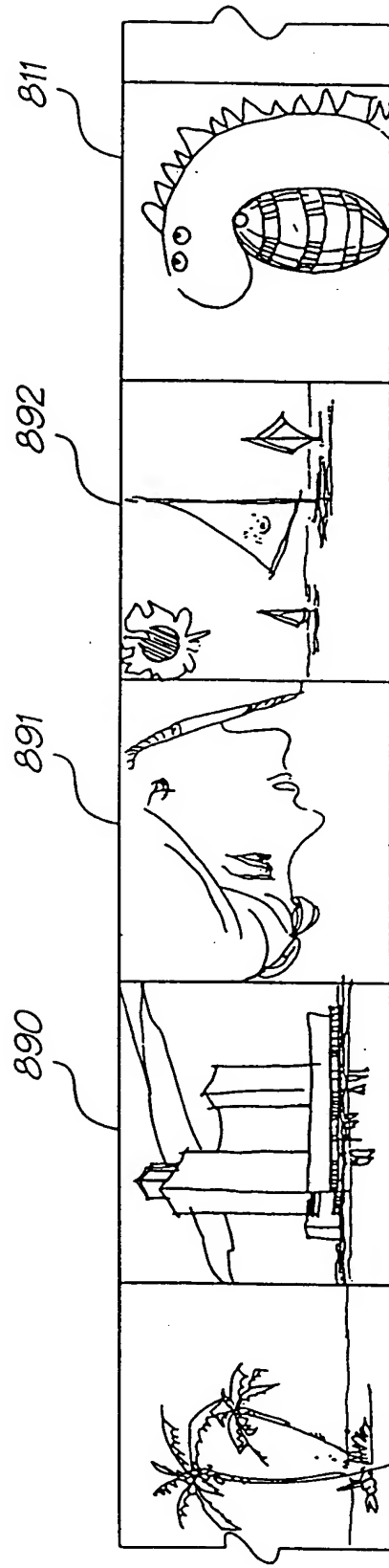


FIG. 219

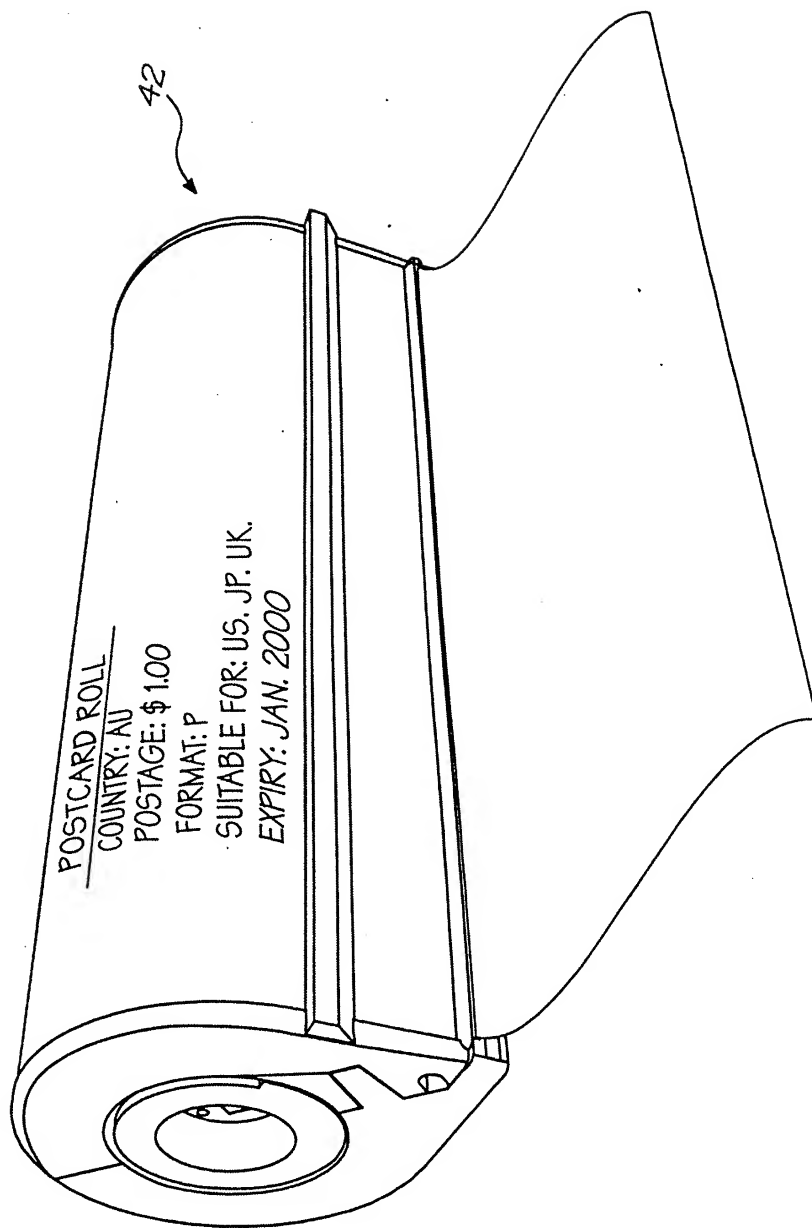


FIG. 220

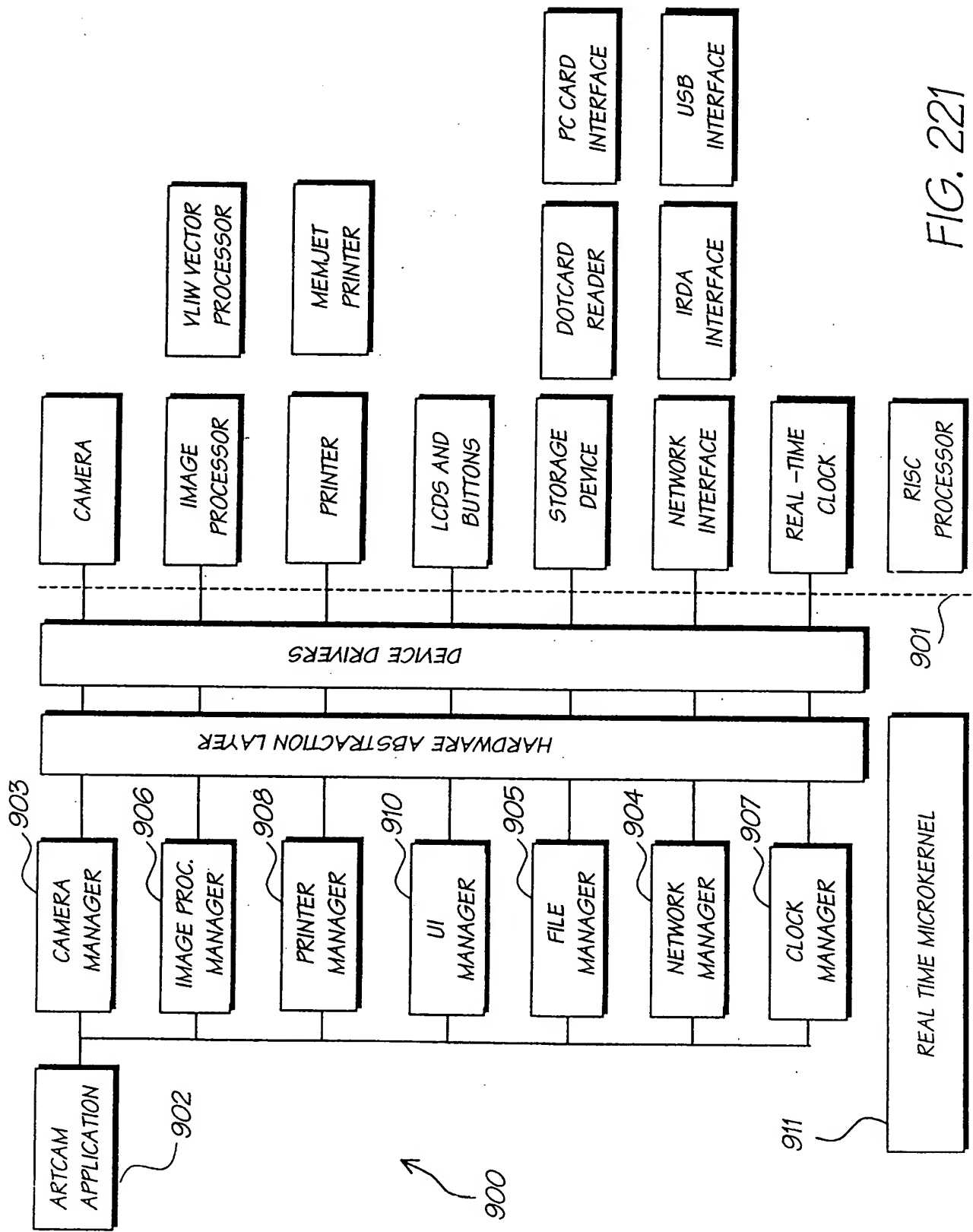


FIG. 221

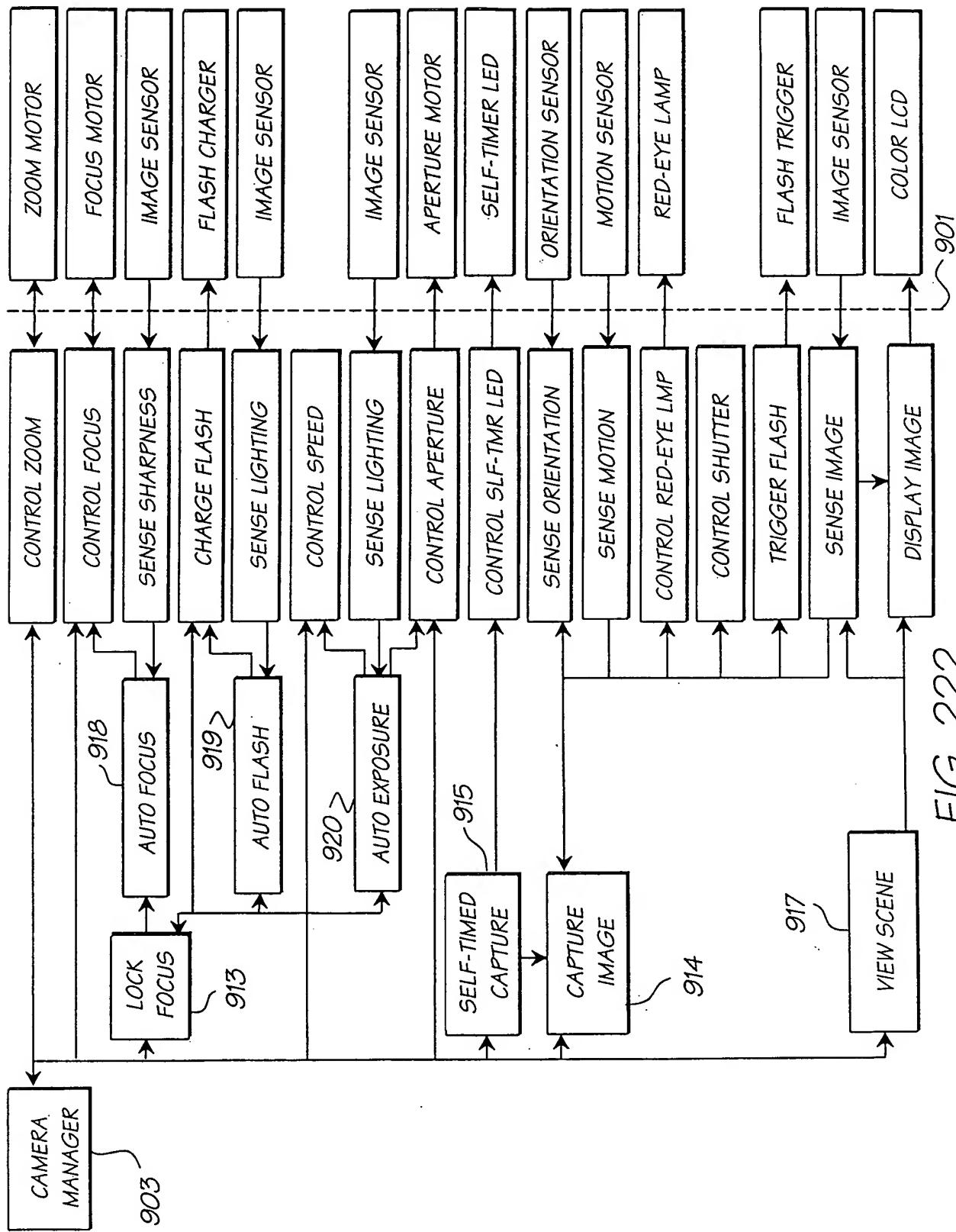


FIG. 222

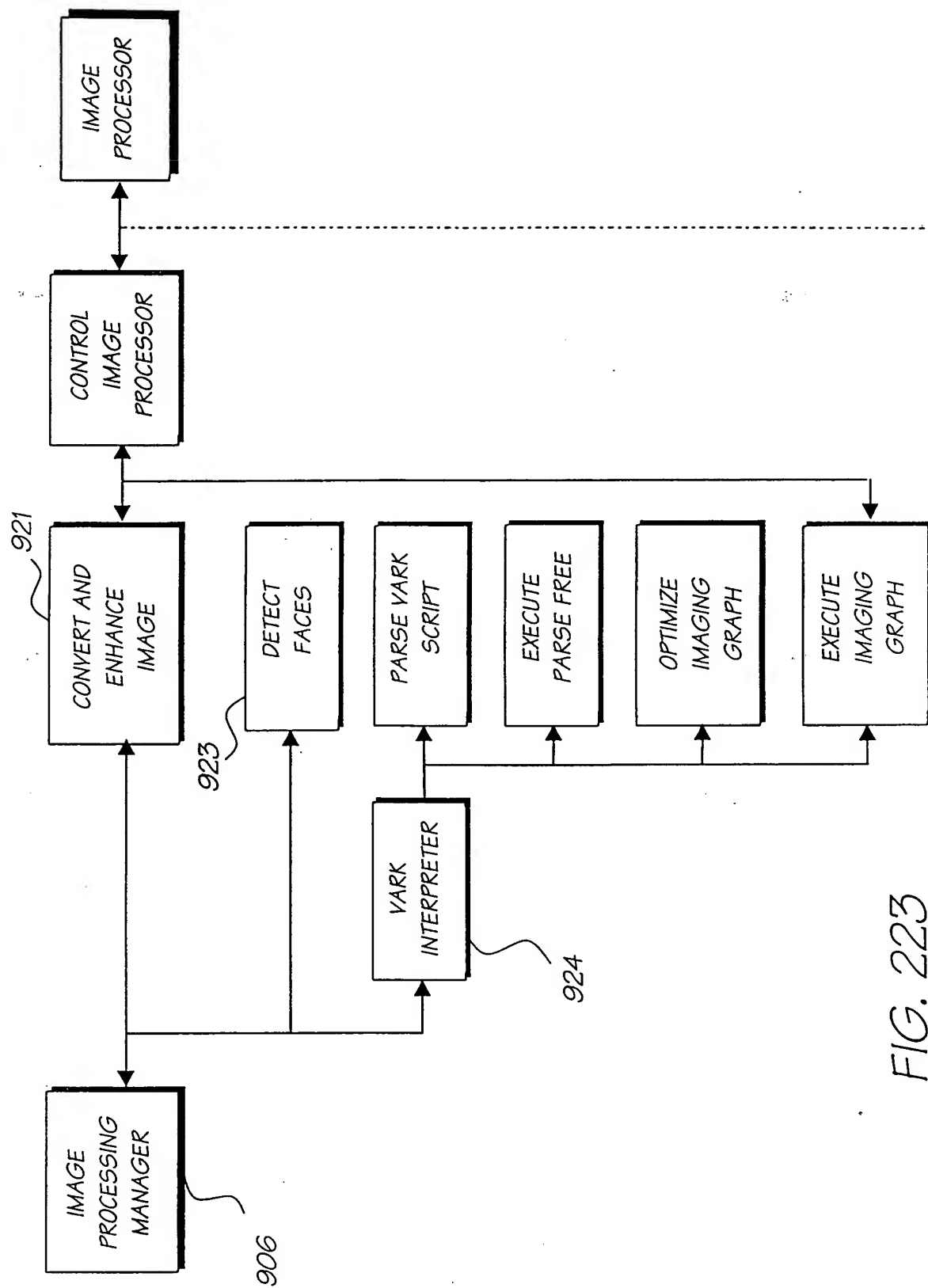


FIG. 223

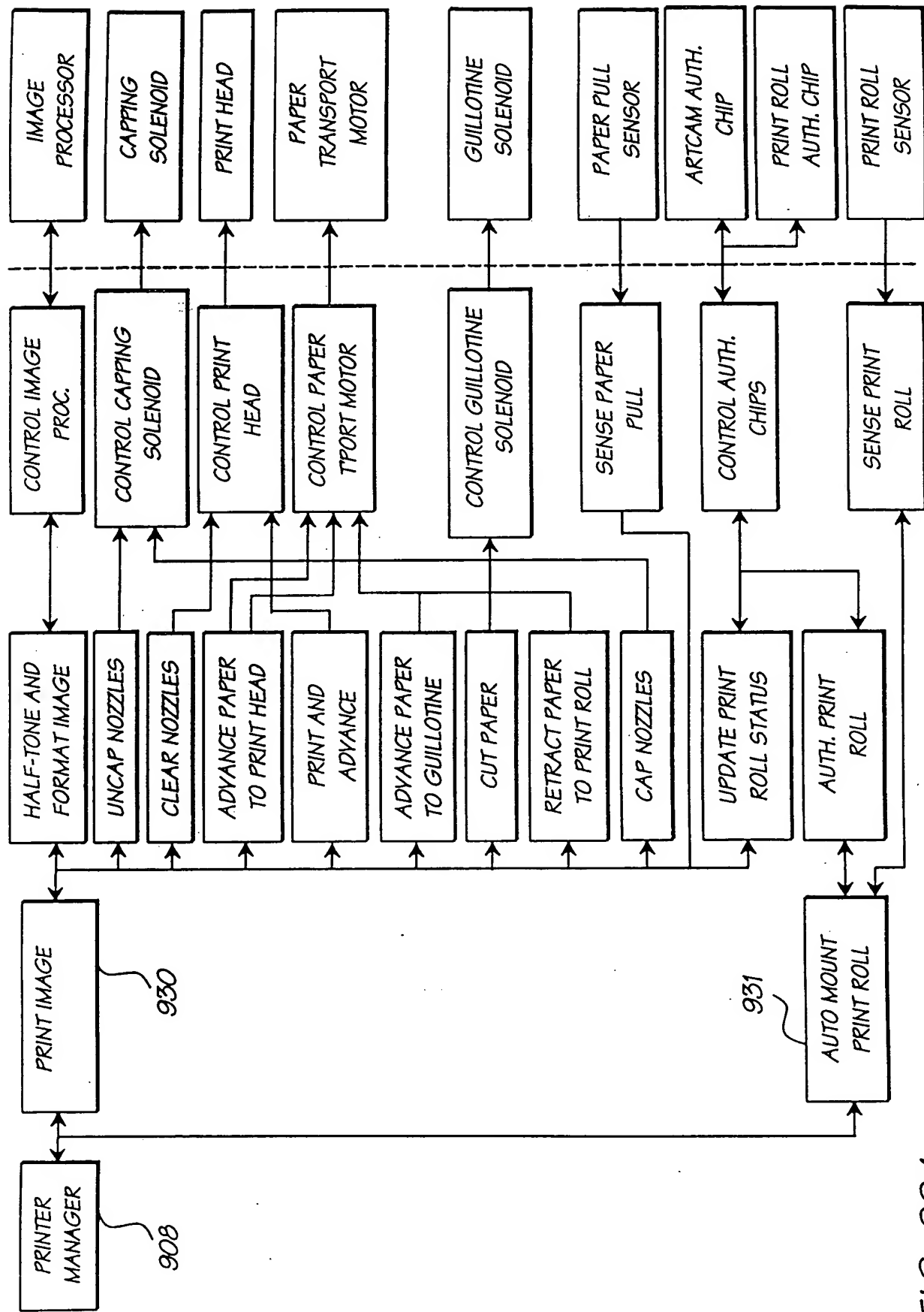


FIG. 224

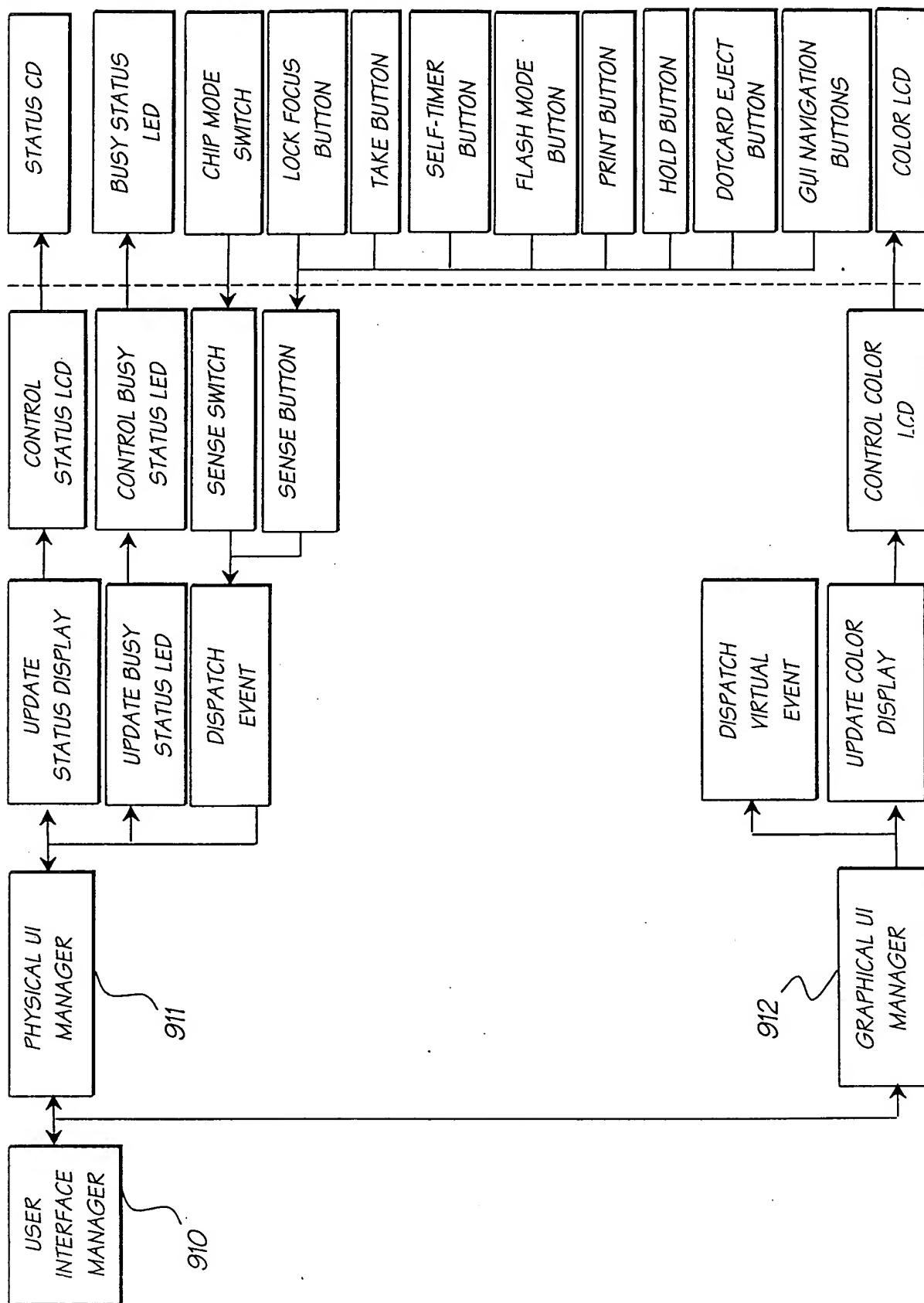


FIG. 225

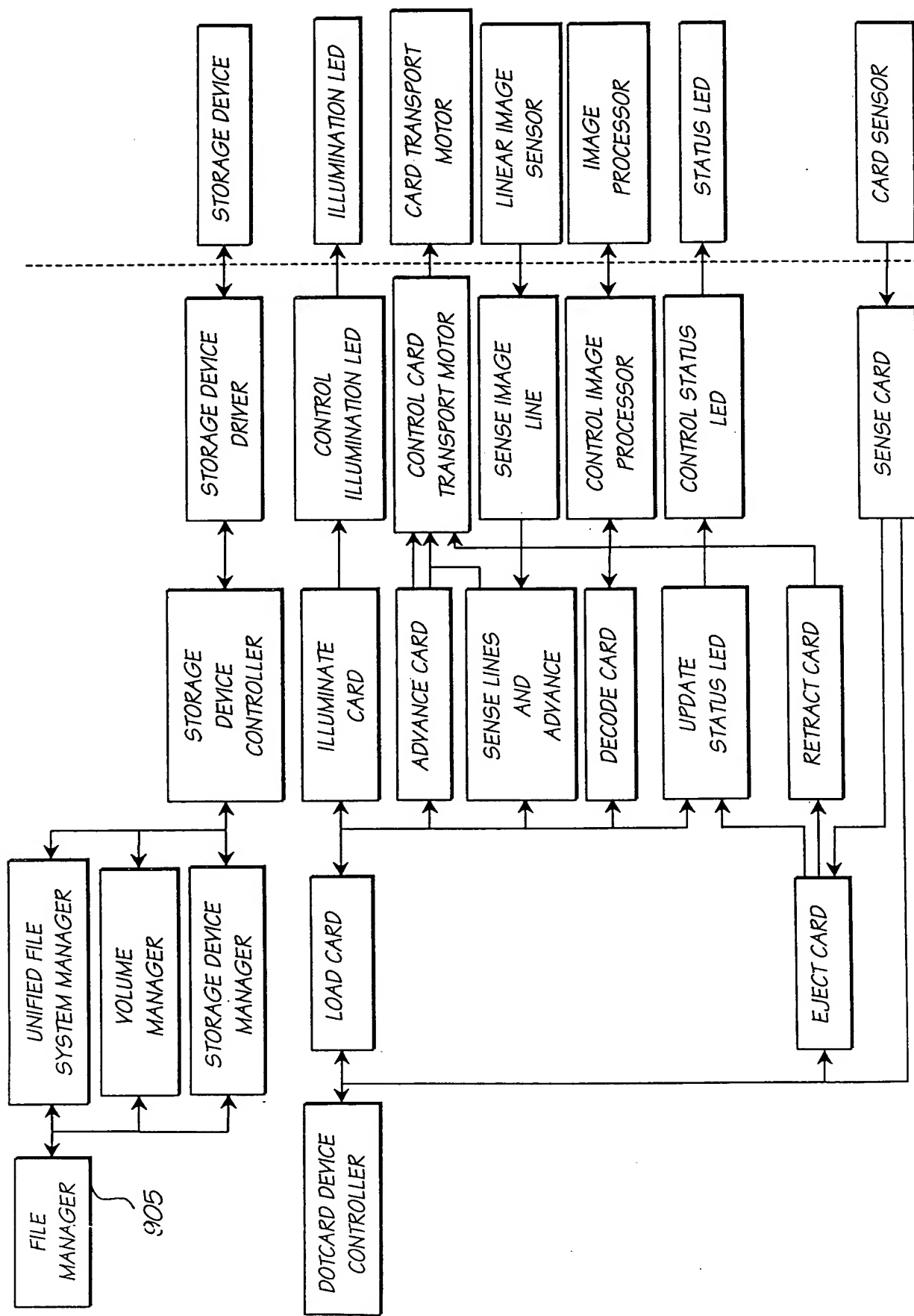


FIG. 226

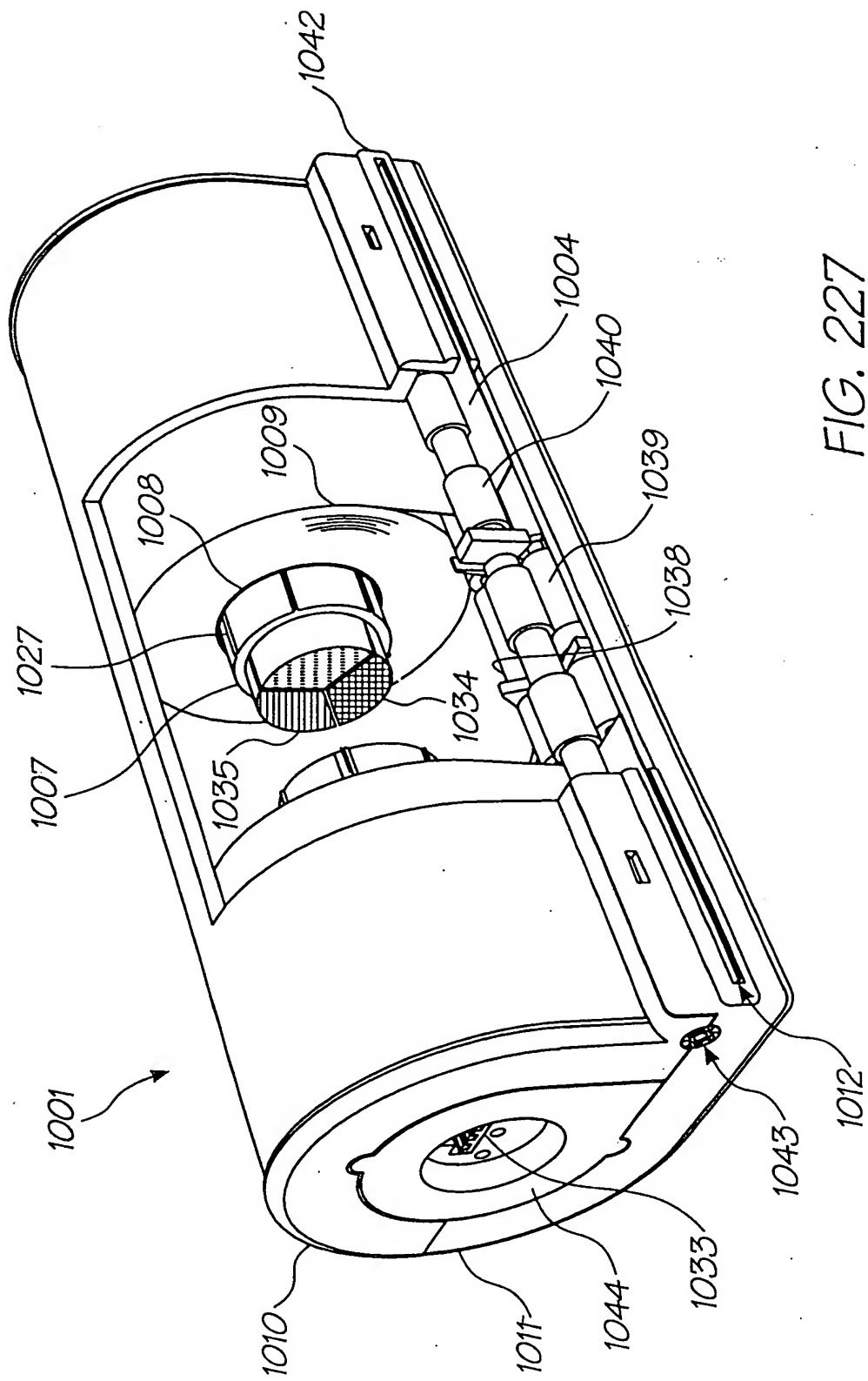


FIG. 227

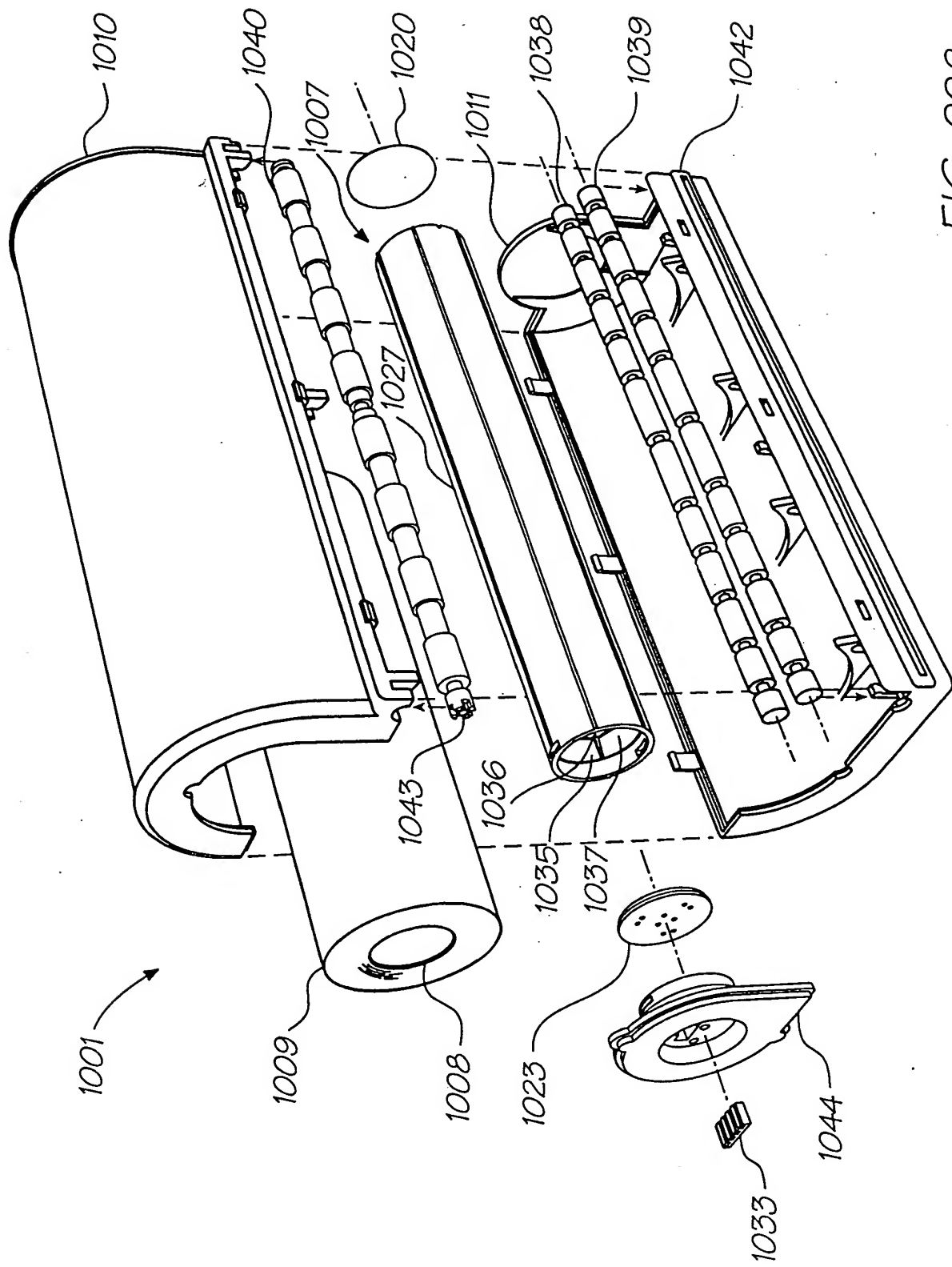


FIG. 228

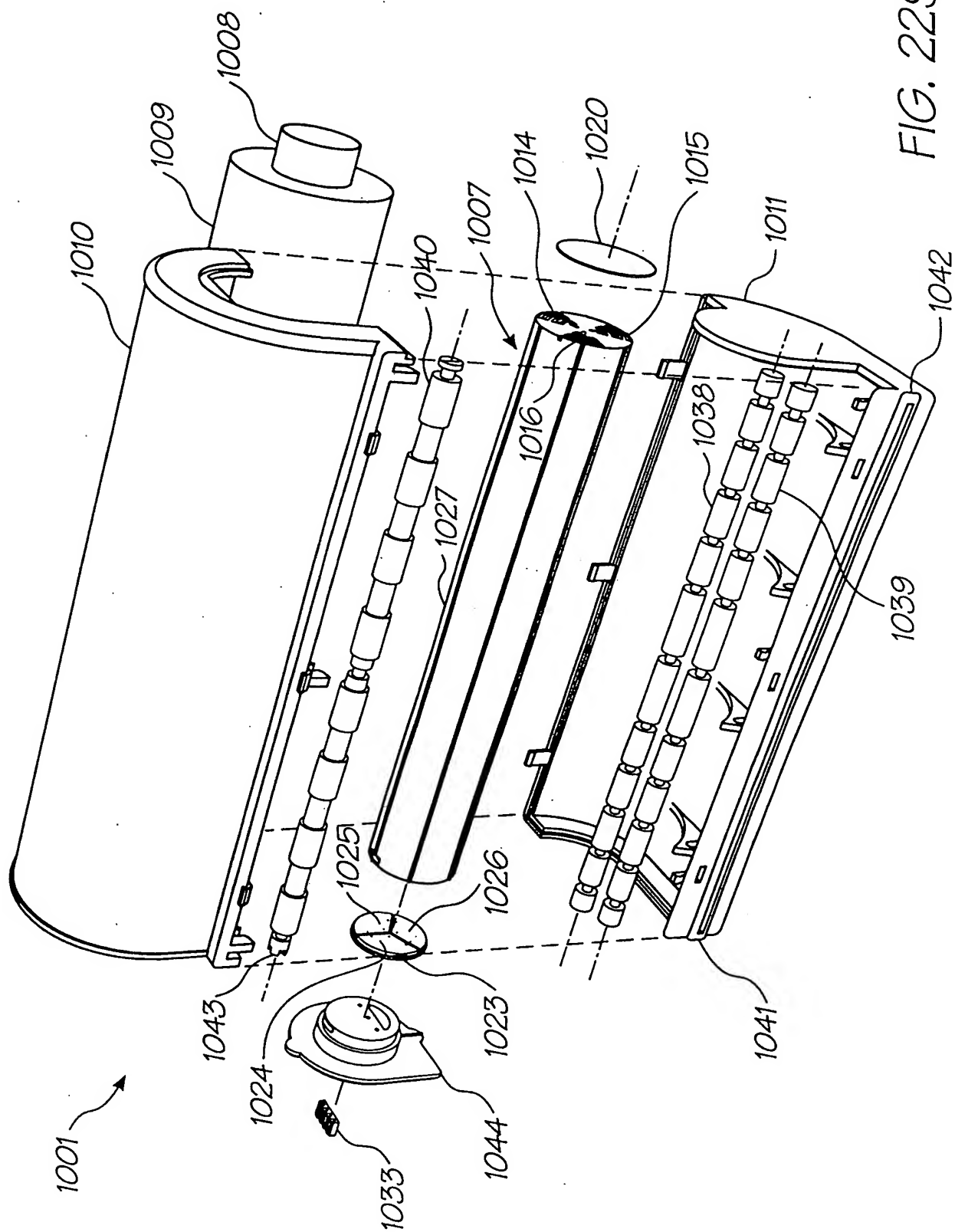


FIG. 229

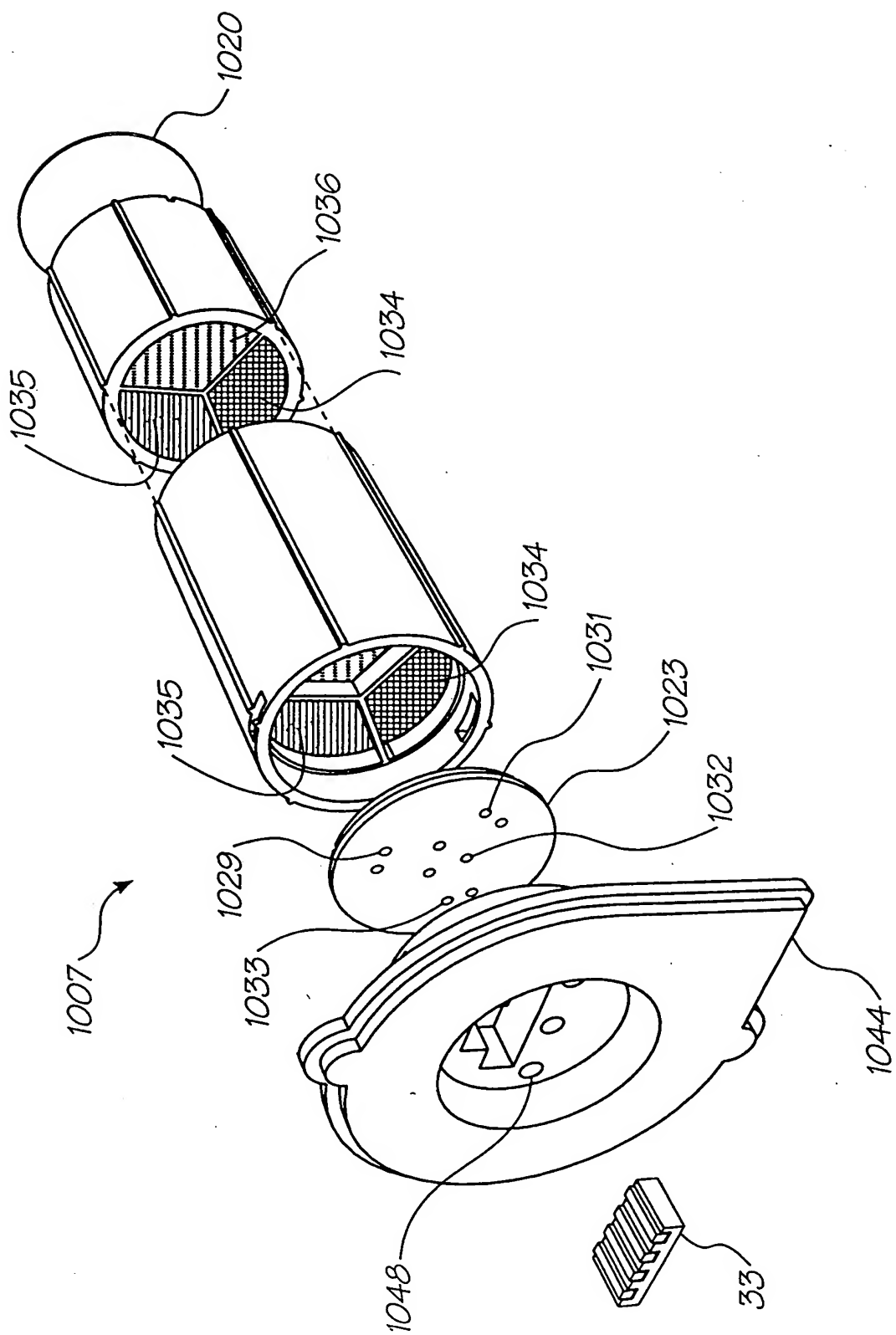


FIG. 230

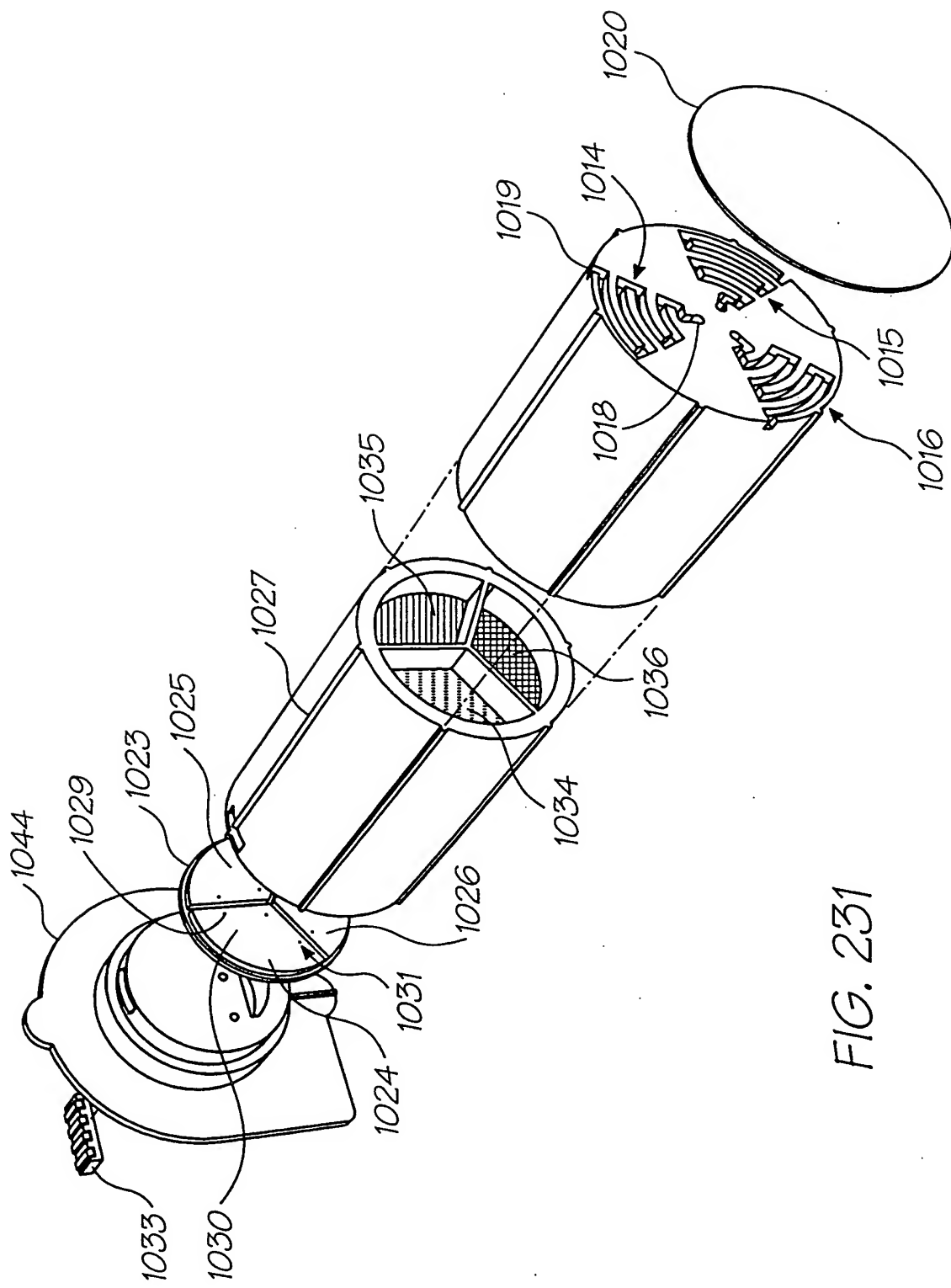


FIG. 231